

COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED



HR00775096

American dental surgeon

SERIAL

Columbia University
in the City of New York
College of Physicians and Surgeons
Library



SEP 27 1940 RIK



Digitized by the Internet Archive
in 2014

Sept
39

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D S.,
XENIA, OHIO.

VOL. I.

PUBLISHED BI-MONTHLY BY
RANSOM & RANDOLPH,
TOLEDO, OHIO.

CONTRIBUTORS TO VOLUME I.

NAME.	RESIDENCE.
W. W. Allport, M. D., D. D. S.	Chicago, Ill.
W. D. Ball, M. D.	Boston, Mass.
W. C. Barrett, M. D., D. D. S.	Buffalo, N. Y.
E. G. Betty, D. D. S.	Cincinnati, O.
A. P. Burkhart, D. D. S.	Dansville, N. Y.
Prof. J. S. Cassidy, M. D., D. D. S.	Covington, Ky.
C. S. Case, D. D. S.	Jackson, Mich.
J. W. Cornelius, D. D. S.	Wisconsin.
M. S. Dean, M. D., D. D. S.	Chicago, Ill.
A. S. Dryden, M. D.	Xenia, O.
F. T. Grimes, M. D., D. D. S.	St. Louis, Mo.
T. L. Gilmer, D. D. S.	Quincy, Ill.
L. C. Ingersoll, D. D. S.	Keokuk, Iowa.
Geo. W. Keely, D. D. S.	Oxford, O.
B. G. Marklein, D. D. S.	Milwaukee, Wis.
A. T. Metcalf, D. D. S.	Kalamazoo, Mich.
Prof. N. N. Noyes, M. D.	Boston, Mass.
D. L. Overholzer, M. D.	Logansport, Ind.
J. H. Peterson, D. D. S.	Akron, O.
F. H. Rehwinkel, M. D., D. D. S.	Chillicothe, O.
R. G. Richter, D. D. S.	Milwaukee, Wis.
J. A. Robinson, D. D. S.	Jackson, Mich.
W. H. Robinson, D. D. S.	Oakland, Cal.
A. G. Rose, D. D. S.	Cincinnati, O.
F. W. Sage, D. D. S.	Cincinnati, O.
J. H. Siddall, D. D. S.	Canton, O.
Prof. J. Taft, M. D., D. D. S.	Cincinnati, O.
C. R. Taft, D. D. S.	Cincinnati, O.
H. H. Townsend, D. D. S.	Pontiac, Ill.
E. J. Waye, D. D. S.	Sandusky, O.
N. W. Williams, D. D. S.	Geneva, Switzerland.
S. S. Wilson, M. D.	Xenia, O.
George Watt, M. D., D. D. S.	Xenia, O.
H. Nichols Wadsworth, D. D. S.	Washington, D. C.

INDEX TO VOLUME I.

	PAGE.
BOOKS AND PAMPHLETS.....	49-123-181-248-365
COMPILATIONS—	
Apparent Death as a Result of Asphyxia.....	58
Swallowing False Teeth.....	59
Tragedy in a Dental Office.....	59
CONTRIBUTIONS—	
About Richmond Crowns.....	134
Address to the Graduates, Ohio College.....	73
Alveolar Abscess.....	210-324
Anæsthesia—is it Physiological.....	1
Anæsthesia—Nitrous Oxide.....	66-135
Cholera Infantum.....	125-195
Development of Enamel.....	321
Dentistry as a Candidate for Medical Honors.....	11
Dental Education and Mechanics.....	277
Dental Stupidity.....	382
Duty.....	256
Duty of the Hour.....	269
Ethics of Journalism.....	206
Fractures of the Inferior Maxilla.....	309
Geographical Distribution of Dental Caries.....	248
Matter—Spirit.....	128
May.....	141
Operative vs. Mechanical Dentistry.....	201
Oral Chemistry.....	273
Preparation of Cavities.....	285
Prosthetic Dentistry.....	280
Removal of Inferior Dental Nerve.....	205
Sanguinary Calculus.....	189
The Education of Dentists.....	6
The Teeth Deteriorated by Disease.....	76
Treatment of Teeth with Dead Pulp.....	256
The Merits of Soft and Cohesive Gold.....	332
Unheroic Treatment of Alveolar Abscess.....	210-324
CORRESPONDENCE.....	44-111-214
Cosmopolite on Illinois Law.....	147
Copy of Illinois Law.....	148
D. M. C.	150
American Medical Association.....	151
Northern Ohio Dental Society.....	153

CORRESPONDENCE—(Continued).	PAGE.
Iowa and Illinois State Societies	155
Hypothetical Case	291-350
Geneva Correspondence	297
Finding Lead by Electricity	299
Wiesbaden Meeting	355
Philadelphia Correspondence	358
"W"	359
Vitalized Air	362
EDITOR'S SPECIALS—	
A Divinity that Shapes our Ends	308
Adulteration of Food	240
Advice to Writers	106
Anæsthetic Testimony	16
Anæsthesia Law in Ohio	23
"And He Died"	348
A Very Ancient Medical Book	179
Baltimore College	110
Boil it Down	107
Change of Date	159
Death Loves a Shining Mark	18
Digestion of Tooth Pulp	107
Disguising Epsom Salts	167
Dentists' Headaches	174
Died Early	349
Editorial Reminiscence	29
Editorial Responsibility	34
Especial Honor	103
Extraction of Teeth During Pregnancy	103
Funny? Well, Tolerably	170
"Galen" on Cholera Infantum	221
Highblown, if not High-fa-lu-tin	102
Hot Air Syringe	172
Hypodermic use of Morphine	239
Honored in Honoring	306
Iodoform	19
"In Memoriam"—Dr. James Taylor	227
Jamaica Dogwood	24
Journalistic	224
Limestone Regions	110
Labor Under Difficulty	111
Literary Piracy	175
Mississippi Valley Association	26
Murder and Suicide	33
Methods of Teaching	163
Mixture of Opinions	168
Metallic Poisoning	179
More that is Funny	344
New Treatment of Diphtheria	27
Not Dead	172

EDITOR'S SPECIALS—(Continued).	PAGE.
Nerve Destroyed and Toothache Cured.....	241
Outvoted.....	24
Ohio State Dental Society.....	26
One More Decision.....	31
"Old Warhorse".....	105
Ohio Dental College.....	106
Our Article on Cholera Infantum.....	178
Obituary—Dr. James Taylor.....	233
Oral Chemistry.....	301
Personal and Selfish.....	100
Personal and Poetic.....	176
Personal.....	226
Progress, or What?.....	229
Report of Discussions.....	35-109
Recuperative Powers in Mouth and Face.....	341
Salutatory.....	15
Starting an Enterprise.....	23
Salicylic Acid.....	32
Shall Dental Surgery be Sub-divided?.....	161
Suggestions to Contributors.....	175
Selecting and Adapting Artificial Teeth.....	220
Thanks! Thanks.....	22
The Long-desired Recognition.....	159
The Health Impaired by Diseased Teeth.....	165
The Emerson Binder.....	176
The Amalgam Question Once More.....	177
The Spleen—What is it for?.....	227
The Attempted Assassination.....	232
The Bug Theory of Dental Decay.....	234
The Mighty Hunter.....	347
Test for Sugar in Urine.....	238
The Religious Press and Nostrums.....	240
The Dental Jaius.....	305
Think Clearly.....	105
Uncultivated Nomenclature.....	109
Unfortunate Interference.....	230
Unusual Exemption.....	238
University of Michigan.....	306
Van Antwerp's Pulp Digester.....	303
Varied Observations.....	307
What they say about us.....	101
Xenia Academy of Medicine.....	25
QUESTION AND ANSWER.....	54-121-180-247
SOCIETIES—	
American Dental Association.....	36-242
Ohio State Dental Society.....	37-340
Mississippi Valley Association.....	37-86-85
Michigan State Society.....	37-142
Kentucky State Dental Society.....	37

SOCIETIES—(Continued).	PAGE.
Northern Ohio Dental Association	37
Cincinnati Dental Society	38
Indiana State Dental Society.....	38-143-245-247
Missouri State Dental Association.....	85-143
Illinois State Dental Society	86-143 }
Iowa State Dental Society	86-142 } 155
Seventh New York District Society.....	144
Nebraska State Dental Society.....	247
Chicago Dental Society.....	99
Odontological Society of Western Pennsylvania.....	246
Pinless Teeth—Kentucky State Society.....	335

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. I.

FEBRUARY 15, 1881.

No. 1.

Contributions.

“Withholding facts is robbery.”—ORVILLE DEWEY.

ANÆSTHESIA—IS IT PHYSIOLOGICAL?

BY THE EDITOR.

[Read before the Academy of Medicine, Xenia, O.]

THE Bible is in no sense a text-book of natural science, and its Divine Author seems to have never intimated that such teaching is a leading or prominent aim in the bestowment of this invaluable gift. But it is evident, in the nature of things, that when it does teach science, it teaches it with absolute truthfulness. Long ago, in allusion to animated nature, it said, “The blood is the life thereof”—a truth slowly received by modern physiology, and recognised only within the memory of some present. And early in the centuries it set forth, in its army regulations, the disinfecting properties and powers of dry earth, and had its directions been rigidly followed, in our late civil war, thousands of lives would have been saved, and men who are mere wrecks would have remained strong and manly. Allow me a quotation: “And thou shalt have a paddle upon thy weapon; and it shall be, when thou wilt ease thyself abroad, thou shalt dig therewith, and shalt turn back and cover that which cometh from thee.”

Nor is it silent on surgery, and we learn, from its description, that the first surgical operation, known to earth, was performed while the subject of it was under anæsthetic influence. And we are told, by the same high authority, that, "Whatsoever things were written aforetime were written for our learning," and, that "All these things happened unto them for ensamples, and they are written for our admonition;" and yet how slow have we been to learn, or to receive, the admonition that surgical operations should be painless, and that, when painful, they are not performed in accordance with true science.

That surgical operations should be unattended with pain is all the more reasonable, when we recognize, as I think we must, that anæsthesia is, in its essential nature, a physiological, and not of necessity a pathological condition. True, many, and perhaps most patients, when anæsthetised, are in pathological states, but this may be their misfortune, and the fault of undeveloped surgical science, and in no sense a necessity of anæsthesia.

Natural and purely physiological anæsthesia may be often observed by almost any who watch their surroundings. Take, for example, the case of Doctor Livingston, in Africa, when mangled by a lion. The humerus was comminuted from end to end by the lion's jaws, and the bones of the shoulder fared but little if any better. So severe were the wounds that they never healed—the mutilated member serving to identify the Doctor's remains, when brought to England, many years afterward. He was fully conscious of all that transpired at the time, and has given a minute description of the scene and its surroundings, and yet, through it all, he felt not the slightest pain. This is only in accordance with the experience of thousands wounded in battle. I have seen fatal wounds which were not felt at the time of their infliction, and, doubtless, other army surgeons, with more extended experience, have witnessed many more such cases than I. Every schoolboy knows that when he is fighting mad, the blows of his antagonist are almost, if not entirely, painless. How often the passionate boy says, and truthfully, too, "I don't care; for when I'm real mad nothing hurts me!" But anger is not essential to the condition, for Doctor Livingston was not angry at the lion, nor is the soldier usually angry when in battle. A child's clothing is on fire—the father rushes to the rescue, and

crushes out the fire with his hands, all unconscious of pain, yet finds himself mutilated for life by the burns, and suffers from them the most intense agony when the anæsthetic state has passed away.

And further, the will-power of one person may so act on the nervous system of another, that the latter can endure severe, if not the most painful operations, without suffering. We may call this personal, or animal magnetism, mesmerism, or what we please; but the facts remain, all the same, quite undisturbed: and facts are facts.

A due consideration of what has been already said, will tend to convince any one that anæsthesia is not, in its nature, pathological; but the fact appears more clearly when we reflect that, in the anæsthetic state, the vital force may be, and often is, above par. This was the case with Doctor Livingston, and it is often so with the soldier in battle. And thus have we suggested the type of the anæsthetic agent demanded by the wants of science, and by the necessities of our race. We want the mental faculties untouched, the vital functions undisturbed, or, at least, not depressed; the sight, hearing, and taste left normal, and even the sense of touch unimpaired, while the ability to feel pain is totally obliterated. If such is the demand, it is evident that we have not yet the agent, or we lack the knowledge necessary to its proper use; yet, in using the agents on hand, we have hints, and even demonstrations, that each of these results is obtainable; but, in the present state of our science and art, we do not have them all at once, in any given case, however desirable.

A confusion of thought pervades most minds in reference to the sense of touch, and the feeling of pain. The sense of touch may be quickened far above its normal acuteness, even when the patient is completely anæsthetised. In 1872 I had a crucial incision made in a rather large carbuncle on my neck. The cuts were said to be three inches long, and an inch in depth; and though anæsthetised till the operation was absolutely painless, I remained so perfectly conscious that I was able to direct the entire process as to the time of cutting, etc.; and the sense of touch was so acute and perfect that I knew just when the knife reached normal tissue, and whether or not it penetrated it.

Every one is familiar with the fact that even when there is hyperæsthesia of a part, its sense of touch may be greatly obtunded, and often nearly obliterated. For example, when very cold, the fingers are hurt by an accident that would be unnoticed if they were normal, yet they scarcely enable their possessor to distinguish minute objects by touch while in this condition.

There is still further proof that anæsthesia is naturally physiological—and that vital force may be equal to or above par during its existence—in the fact that partial and probably complete anæsthesia may be produced by free, full and very rapid respiration of atmospheric air, as first suggested by Doctor Bonwill, of Philadelphia. I have also demonstrated that this condition can be brought about by inhaling a mixture of oxygen and hydrogen, in the proportions to form water. This, however, is a very dangerous experiment, and should never be repeated. I intended to try the inhalation of pure, passive oxygen, but was shelved before finding it convenient to do so. This is worthy of investigation, however.

Local anæsthesia has been produced by electric currents. Here the writer's experiments reach nearly three thousand cases. In many of them the result was perfect anæsthesia, while in a majority nothing was gained. Inability to diagnose the proper cases led to abandonment in practice; yet it will scarcely be claimed that the vitality of the part was lessened by the electric current.

My earliest experience with anæsthesia, in my own person, was certainly not pathological, and not much unlike cases already noticed. When five years old I was walking, barefoot, in a clover-field, to catch a young bird. At the instant of success a bee stung the sole of my foot. The pain was quite unworthy of attention, and received none, though the sting was retained, and the ensuing swelling indicated more than the usual severity of such accidents. Vitality was certainly not depressed then, but rather the reverse, as would be inferred from our knowledge of the influence of the mind over the bodily functions. The success of the effort had a tonic rather than a depressing influence.

I have already alluded to the possibilities of anæsthesia, as demonstrated by manifestations and phenomena sometimes

witnessed in the use of our most common agents. Let cases illustrate: In 1858, Mrs. M. had a diseased thumb, and her physicians decided to amputate. By request, both of physicians and patient, I took charge of the anæsthesia, and, on examination, decided to use chloroform. In eighty seconds from the first inhalation, I made the announcement, "We are ready," though the patient was still fully conscious, indeed, wide awake, and taking full interest in surrounding circumstances. Both surgeons, at once, and promptly, replied, "Oh, no!" to which I replied, mildly, but firmly, "Gentlemen, see to your end of the double-tree, and trust us to keep ours even," at which the patient laughed heartily. Still doubting, however, one of the surgeons pricked the diseased organ, repeatedly, with a bistoury, which proving satisfactory, he proceeded to operate. On removing the thumb, it was found that the disease had extended to the metacarpal bone, and it was removed, thus doubling, and greatly prolonging the operation. Yet, through it all, the patient was wide awake, cheerful, and a close observer of all that transpired, and stated, at the close, that she had suffered no pain whatever, and all present believed her.

Within a year or two I have had a number of painful prostrating abscesses. But one, and it in the right lung, was left to open of itself. Some required deep cutting. For many of the cuts I inhaled nitrous oxide, often intentionally remaining awake to give the signal when to cut; and for one large tumor I inhaled the gas to unconsciousness, and after regaining the use of my mental and muscular faculties, thrust a bistoury into it to the depth of an inch, and cut outward, with absolute freedom from pain, as had been my experience in each and all of the other operations mentioned.

With sulphuric ether I have not tried the plan of full consciousness of the patient in severe operations. My experience with this agent is quite limited, extending only to about a hundred cases, while my chloroform patients number about two thousand, and my nitrous oxide ones many thousands.

In claiming that the anæsthetic state may, and should be physiological, I have used the word in opposition to pathological, the idea being that pathology is morbid, or diseased physiology, and when this is borne in mind I shall not likely be misunderstood.

THE EDUCATION OF DENTISTS.

BY A PHYSICIAN.

WITHIN the memory of many now living, the barbers and blacksmiths in town, and the blacksmiths, local preachers and horse trainers in the country, in common with practitioners of medicine, gave the teeth the surgical attention they received. And as dental surgeons, these various classes held about equal rank in the popular mind, and really differed but little in merit, in their treatment of the teeth, this treatment consisting of twisting them out with the barbarous turn-key, called "pullikins," or breaking or filing off sharp projections, so that they would not wound the tongue or lips. Often has the writer heard warm discussions as to the superiority of the leading physician of his native town and a blacksmith of the same place; and the champions of the blacksmith claimed the victory, inasmuch as the physician patronized him and his turn-key, while the smith either extracted his own teeth or sought the torturing touch of a fellow blacksmith.

A number of years ago, Dr. Watt deposited in the museum of the Ohio Dental College a forcep made by the father of a noted antiquarian, and used, more or less, in extracting teeth for more than half a century—used the last time in removing the last tooth of the maker when he was nearly a century old.

Dental surgery is not such now. Why was it such then? More acute pain than toothache is scarcely known to the race. Decay of the dental organs is more common than any other disease. The extraction of a tooth is one of the most painful operations known to surgery. Decay and toothache are not of recent origin. For a long time they have been as common as flies in summer. Unweaned babies cried with the tortures of toothache, or died in convulsions or coma, from the reflex irritation of dentition. Prospective mothers agonized in the throes of odontalgia, whether their teeth were sound or unsound. Dyspepsia griped and starved its staring victims, because their stomachs could not digest the unmasticated food, mangled, but not chewed, by the rotten, filthy, fetid teeth, which, unable to perform their

functions, only defiled and poisoned what they could not prepare for nutrition. This distressed and depressed condition was handed down from sire to son, was visited on even the third or fourth generation, because the stream cannot rise higher than the fountain, and because none can bring a clean thing out of an unclean.

And were all these things known to physicians and surgeons? Were physicians educated then? Had they been educated preceding the induction of this state of affairs? Were there medical schools? And, if so, did they teach the anatomy, physiology, and pathology of the teeth? Did they teach dental surgery? Yea, verily, did they, for the writer heard them. In one of them, in a course of four months, the professor of anatomy and physiology devoted a half hour to the consideration of the teeth, and the professor of surgery gave them still more attention, spending an entire lecture in talking about them and the instruments used in their extraction.

The writer of this is a physician, and from observation, and judging by the dental attainments of his fellow practitioners of medicine, he is led to believe that other medical schools gave the teeth but little, if any, more attention than was given by his *alma mater*. But, in view of the fact that the physicians of that day, and especially the college professors, were well read and wide-awake on many, if not most of the ills of human life, how could there be such neglect of the dental organs? The answer is easy:

Notwithstanding the intense agony, toothache is not apt to kill. Defective teeth do much to shorten life, and Sir Thomas Watson offers as a prominent item in the causes of increasing longevity, the better condition of the teeth, brought about by the revival and development of dental surgery. Indigestion, and the consequent defective nutrition, shorten life, and the physicians of the period of greatest neglect were well aware of this, but as the results were not so immediate and direct, their attention was taken up by the ills which threatened sudden or early danger. In consequence of this state of feeling, although medical schools were thoroughly organized, and well manned, dental surgery made no progress worthy of the name, and, under similar circumstances, could make none worthy of the name. The ills which flesh inherits are too many, too serious, and too grave in their results, for

consideration in a college course, as then laid down by the popular views of medical education, to give time and attention to toothache, and the troubles of dentition, which these call for. But a change was coming.

A few physicians began to give their undivided attention to the mouth and its troubles. These were lonesome and sought company. They persuaded others to follow their example. These led others, and associated efforts resulted. In society, where men compare their mental attainments with those of their comrades, a spirit of emulation arises. They are not content with present acquisitions, and hence seek for more and greater. A necessity for instruction is thus demonstrated. A school becomes necessary and is established. It is devoted to specific instructions, because it originated in specific want. If a large school, or if it includes a wide range of instruction in its curriculum, it may be called, appropriately or otherwise, a college. Some such train of circumstances led a few physicians, step by step, through a long process of development, resulting in the establishment of a dental college.

This was a new thing under the sun, and its career was hopefully, fearfully, jealously and sneeringly watched. It lived and grew, and quiet looks of calm contentment, and smiles of joy and comfort took the places of frowns and looks of despair and woe. In the first ten years of its existence it did more for the progress of dental science than all the medical schools had done from the dawn of civilization. It soon had company. Other dental colleges were organized, and a new feature of professional education was thus fairly inaugurated, and thus came the revival, or rather the creation of dental science referred to by Sir Thomas Watson, as noticed above.

In the formation of dental colleges, physicians took the lead, indeed did all the work. Nor did they forget that they were physicians, but in organizing their special schools, they laid the foundation broad and firm on the basis of medical science. As in medicine, they recognized anatomy as the chief corner stone, and chemistry as the bond uniting, and practically utilizing all the sciences included in the curriculum of study. And in few medical colleges have better arrangements been made for the study of these than those provided in the leading dental schools. They also made ample provision for the study of pathology and thera-

peutics, and the attainments of their pupils in these directions compare favorably with those of the students of cotemporary medical colleges. There is but little doubt that the colleges have done more to advance dental science than all other agencies combined, and, in general, their course is still upward as well as onward.

After the great advantage to be derived from dental colleges had been fully recognized, the restlessness incident to the human mind, especially to American mind, began to manifest itself, and to inquire if there might not be devised a more excellent way; and this inquiry was certainly commendable. Some advocated the establishment of a dental chair attached to medical colleges. That is, a professor of dental surgery was to be added to the faculty of each medical college, and this was to elevate dental surgery, as the medical students would thus become dentists. The plan is a good one, not to make dentists, but to give young physicians a better knowledge of the teeth and their relation to morbid states, than they would otherwise get. Physicians are demanded in villages and country places that cannot each support a dentist.

It is well for the physician and his patrons that he can, at least, diagnose dental diseases in such cases. A professor of, or lecturer on, dental surgery in a medical school, can be of very great use to the medical students, and, through them, to the community at large. But for a preparation to practice dentistry the plan is futile. As well might we expect the medical students to become blacksmiths by an occasional lecture on metallurgy, or ministers of the gospel after a few lectures on biblical literature intermingled with their regular course.

It is very desirable that dentists should have a thorough medical education, yet there are certainly difficulties in the co-education of medical and dental students. For instance, it is highly important that both should study carefully the anatomy of the whole human system, yet as time is precious, and human memory unretentive, the medical student should give extra attention to certain parts, such as may be involved in operations for hernia and the like, while dental students should give just as careful attention to certain other parts, as the face. This difficulty lies equally with chemistry, pathology, therapeutics, etc. And herein lies all the objection we see to dental colleges in connection with

universities, where the same professor, and mainly in the same lectures, teaches both classes of students.

Universities often have special advantages in the way of museums, cabinets, and chemical and philosophical apparatus, that may more than atone for the want of special directness in their lectures. Of course neither class of students can hear or learn anything that is not valuable, but as their memories cannot retain all that they are taught, and the time allotted in ordinary courses of study is too short to teach minutely all the details of any science recognized as part of the course, the lack of special application in the lectures must be a misfortune. However, this can be overcome mainly by a little additional labor on the part of the teachers, and it is quite probable some such method is practised.

The education of the hands and eyes is a very large and important part of the dental education. The hand of the mechanical genius, and the eyes of the artist, are good factors to start with in making a dentist. A good, strong, well balanced mind is the all important requisite here, as in all other professions, but the other qualifications are very important. In the popular mind they are possibly overestimated, however, as I was told by a dentist, aged and experienced, that when asked to take a private student, the parent's or guardian's recommendation is, invariably, "He's a perfect genius—always tinkering with tools." But, on the other hand, the dentists may estimate them too low, as I think the dentist referred to did, when he told me he could always train the hands without trouble, while the writer has seen hands that could not be trained to handle tools accurately.

It seems, at first thought, that it should not be more difficult to prepare to practice dentistry, than to practice medicine. But, if we take the view that dentistry is a specialty of medicine, and place the dentist on the same platform with the oculist, the case is quite different. In that view, the dentist must take a full medical course, and receive the degree of M. D., before he is ready to begin the study of dentistry. In other words, double the time will be required to make a dentist that is necessary to make a physician. It is probable a majority aiming at dentistry will prefer to consider it an independent profession, and seek by a direct road to reach it, rather than take the double track, merely for the sake of medical recognition. It matters but little after all about

the standing or recognition, provided the attainments are made.

But there are two sides to the question of recognition. If the dentist must take the general medical course, and get the M. D., before he is recognized as of the fraternity, should not the physician take the special dental course, and get the D. D. S. before he is qualified to extract or otherwise interfere with the teeth? Of his brother physicians, the writer has seen regular graduates extract the first permanent molars (called the six-year molars), in mistake for temporary teeth. Such maiming is simply outrageous, and indicates that its perpetrator needs dental, as much as any dentist needs medical instruction.

But in the way of dental knowledge there is a revival in both professions. In a number of the medical schools, dentists are teaching, and the physicians thus taught will not make serious mistakes, like that referred to above, and the dental colleges, in connection with the universities, and those independent, will stimulate each other, and a generous rivalry cannot be otherwise than promotive of good results.

It is not the aim of the writer to determine which of the present methods of dental education is preferable. Both are good. If by pointing out some of the advantages and drawbacks of each, the writer can awaken closer attention to the education of both physicians and dentists, he will feel amply compensated for this hastily written article.

DENTISTRY AS A CANDIDATE FOR MEDICAL HONORS.

BY E. G. BETTY, D. D. S., CINCINNATI.

It certainly seems like presumption for a young and inexperienced member of the profession to make any remarks upon the accumulated results of the laborers who have devoted their lives to the advancement of the young, yet vigorous, profession,yclept dentistry.

The excuse may be found in the fact that, as no two think alike, 'tis possible, in the great variety of opinions, to make new combi-

nations by turning things over and over; something or other is always sure to present a new phase for consideration. As time progresses, the original impulse that suddenly brought into prominence a new field of observation and experiment, loses some of its strength and settles down to a given ratio of progress for daily labor.

The frequent and brilliant flashes of thought that characterize the opening up of new intellectual territory, do not continue with their initial activity. If it were so, exhaustion would soon occur, and nothing be left for posterity with which to occupy its mind. These remarks are substantiated in a general way by the history of the revival of arts, letters and sciences, dating mostly from the fourteenth and fifteenth centuries. A glance at almost any department of human ingenuity at the time will show with what remarkable rapidity great discoveries followed one another. Subsequent years of investigation in the many paths laid open, demonstrate the effects of intellectual pursuits upon the mind of the individual, and through the individual upon that of mankind. Through all, the emanating principle is progress.

Dentistry, too, then, is making progress, but not with the speed it evinced a few years ago. Like a good many other matters relative to dentistry, the question of its claims for medical honors is also in a state of chaos, or as Milton puts it, "Confusion worse confounded." Judging from present indications, it does not seem at all likely to resolve itself into anything reasonably definite. Scarcely a meeting of dentists takes place, but that something is brought up upon this subject; it is again discussed pro and con without anyone going away the wiser as to the true merits of the subject.

As a general proposition, it may be stated that dentistry owes its present status to the introduction of cohesive foil and the mallet, the rubber dam, the burring engine, and last, but not least, to the formulation of the chemical theory of decay. These things are not new to anyone; in fact, reference to them has become hackneyed, solely for the reason that they are the great factors comprising our little all. Yet with what rapidity they followed one another! What an impulse they gave the new-born profession. To speak correctly, they constituted the impulse—the motive power that carried into prominence and effect the science of den-

tistry. Subtract them from the dentistry of to-day and nothing worthy of the name would remain. Since their time nothing has been done to advance practical dentistry, save the accumulating experience in their use.

The only great gift to mankind that dentistry had anything to do with, was the discovery of anæsthesia. Yet it was not dentistry that profited by it. In looking back over the development and progress of modern dentistry, nothing of importance has taken place or been discovered that, historically speaking, is not within the memory of some still living, or engaged in its practice.

The educational phase of our profession is at present engaging our attention to a considerable degree, and if the matter is kept thoroughly agitated, it may, in a few years, do more to establish the worth and value of dentistry than all else combined. It is worse than useless to occupy the time at dental meetings clamoring for recognition as a "branch of medicine," or filling the journals with matter to the same effect, so long as we do nothing to deserve that recognition. There is not to the writer's knowledge a single medical college that teaches in a sufficiently thorough manner the peculiar requisites for the intelligent practice of dental surgery. Neither is there a dental college that will confer upon an M. D. its consent to his practicing dentistry without his having "gone through" a course of instruction upon operative dentistry in its classes. Dentistry must widen its views very materially before the profession of medicine and the public recognize its pretensions to equal respect with the time honored institution of medicine. All things are measured by the amount and value of the services they render to mankind. We have yet to see ourselves regarded by society in the light of "honored practitioners of a branch of medicine." Our profession is a growing one. Its brilliant success so far has made us enthusiastic in its cause, and, we fear, too clamorous for that deep-rooted reverence which time only can secure. Like many other things in the history of American civilization, it is the outcome of an impulse. Its development was so rapid that it burst forth upon the world in almost complete form, before the many were even aware of the existence of such a profession. As it is now constituted, it is a science, the practical aspect of which is capable of many achievements, and has exhibited some triumphs. In comparing its claims for "honor"

with the time-tested ones of medicine, we do not hesitate to say that dentistry has yet much to accomplish before it is tacitly and unconsciously awarded a position co-equal with the great departments of medicine. It must abandon its system of exclusiveness in its educational institutions, and consent to become the appendage of a medical school. So long as things remain as they are, dentistry, as a branch of medicine, will never advance beyond its present limits. The sooner "dental colleges," as a distinctive class, are abolished, the better it will be for the future interest and greatness of the profession. Yet, when the constantly increasing volume of medical knowledge is looked at, there does not seem any resource save that of keeping dental education distinct and apart.

All things evolve. In the present we can see a few signs of the times. They are the adoption, by leading universities, of a "dental department," and the founding of periodicals, broad in their principles.

When time has passed and dentistry become a matter of public importance, we will see it recognized as a "branch" of medicine, without the egotistic clamor that is at present so rife and nauseating.

Editor's Specials.

"Wisdom is better than weapons of war."—SOLOMON.

SALUTATORY.

IN taking editorial charge of the JOURNAL, an embarrassing sense of responsibility would overwhelm us, were it not that the position is not wholly new, and the duties not entirely unfamiliar. When much younger than now and without experience, we began editorial work on the "Dental Register," we were beset with fears and forebodings as to our ability to accomplish the labor expected. The question of failure or success then and there, we leave with our readers of the olden time. Allowing the dead past to bury

its dead, we propose to act in and with the living present, pressing toward the mark for the prize of the high calling of advanced work in the field of dental science.

A few years ago the editorial pen was hopelessly laid aside, and without a murmur. The ability to take it up again is as much a surprise to the writer as it can be to any one. With thanks to the Giver of all good for the gift restored, it shall be ours to dedicate it anew to the advancement of the knowledge in demand by our profession for the welfare of man. With zeal as fresh as ever, and with a higher sense, and a more accurate knowledge of the duties involved, the work is cheerfully resumed.

The generous confidence of our publishers gives us absolute control of the reading matter of the *JOURNAL*; and we trust we shall have the sympathy of our professional brethren as an additional encouragement—sympathy personal, as well as for the good cause in which we labor, and that this sympathy will show itself in prompt patronage to our publishers, and in the supply of original matter for our pages. It will give us great pleasure to lay the good thoughts of our brethren before our readers. With such help, we expect to have the most thoroughly original journal known to the profession. But, if you disappoint us, brethren, of course we shall fail. We hope to have such a variety of departments that anything you may wish to write can find its appropriate niche. We suggest, after matter shall have accumulated on our hands, “Original Contributions,” “Societies,” “Compilations,” “Correspondence,” “Question and Answer,” “Books and Pamphlets,” and if anything good is received, that will not range under some of these, it will not be rejected, even if a special department must be made for it.

In the years past of partial inactivity, we found ample leisure to read, study and investigate facts and principles lying at the foundation of successful practice. We hope to be able to give our readers the results of these researches in the pages of the *JOURNAL*, and in this respect we feel better prepared for editorial work than ever before.

But, after all, a salutatory answers about the same purpose that a target does at a boys' shooting match, in showing how far the mark is missed. But we shall never hesitate to miss the target, if by doing so we can hit anything more important. In other words,

as we learn from the light of progressing circumstances, we shall feel free to act in accordance with the light, regardless of the departure from our programme, which may be involved in doing so.

And now, friends, readers, regarding ourselves as introduced, let us act toward each other with the freedom and frankness of true friendship. Send us your thoughts, in pen or pencil, and we shall send you a carefully gotten up journal, provided, of course, that all is right between you and our publishers.

ANÆSTHETIC TESTIMONY.

ELSEWHERE we publish a copy of the statute of Ohio regulating the administration of anæsthetics. It is a just and appropriate law, and we think common sense, and ordinary prudence would insure obedience to it without statutory enactment. It will probably be a long time before courts and juries, to say nothing of the popular mind, will recognize the fact that the testimony of a person, even but slightly under anæsthetic influence, is as unreliable as the dreams of *delirium tremens*. And this being true, whose character, and whose life is safe, if only himself and his patient are present during an anæsthetic operation.

A few years ago we administered nitrous oxide to a distinguished and very talented minister of the gospel, for the removal of several teeth which had been broken in attempts to extract them. We stood beside the patient, after the operation, until consciousness had returned so fully that he knew where to spit out the blood, when we crossed the room to get him a glass of fresh water. When we left him his countenance displayed the utmost agony of helpless anger. Returning, we spoke kindly, when, with subdued dignity, he said, "Is it probable that I can yet reach the 7 P. M. train? I wish to get away." "Certainly," said we, "but why not go at 2 P. M.?" He then spoke with fury, "Now you would add insult to injury. You know that train has been gone for hours." We pointed to the office clock, and he looked at his watch. "They've stopped," he said. We remained silent a few

minutes, after which he inquired, "Is it possible I have been in this chair only ten minutes?" The countenance became at once natural, and he told us he thought we had decoyed him into a crowd of roughs, and, after knocking him down, had fled, (pointing in the direction of the ice-pitcher) when the roughs inflicted horrible and nameless mutilations on him, and left him to die. Years afterward he told us the terrible dream still seemed to have all the reality of truth. It occurred after he had seen us go from him, in the direction he pointed out. His eyes were open, and he was in condition to recognize any persons present.

For experiment, we breathed the gas, some years ago, with the arrangement that a sharp instrument was to be driven into the thigh at the end of each minute. We were conscious, and watched the clock. The last five seconds of each minute seemed like hours; and so they seem yet. Such testimony could not be otherwise than worthless.

The famous Philadelphia case resulted in the death of the operator from the effects of the imprisonment and mental shock, and yet, time, with the facts, demonstrated his absolute innocence. Various other cases have occurred in which the operators have lost life, liberty or business prospects, by not following the dictates of common prudence, having at least one disinterested witness present, as now required by law in Ohio.

We do not believe that our ordinary anæsthetic agents excite the amorous feelings directly, but the mode in which they are administered, even sometimes when the operator tries to have it otherwise, tends to the retention of carbonic oxide or acid in the blood by not allowing absolute freedom of expiration, and thus are the amorous propensities stimulated. (This is the physiological explanation of the "biling and cooing" of lovesick lads and lasses.)

Women at the "change of life," either first or second, are more likely to exhibit such symptoms than are ordinary patients. Though our experience in anæsthesia is rather extensive, we have witnessed but few cases of the kind referred to. We have been very cautious as to the condition of our patients, and advise all to take due precaution.

A few months ago a lady, a little over forty, took gas for the removal of badly broken teeth. After a very few inhalations she

began to manifest the most amorous feelings, and to all appearance experienced a complete venereal orgasm. The lady friend with her had difficulty in keeping her protected from undue exposure. The gas produced complete anæsthesia without change of complexion or other undesirable symptom.

Now, in the absence of witnesses, this lady would, in all probability, have testified to an outrage, and an unscientific medical examination would have tended to confirm her testimony.

In the terrible tragedy at Oakland, California, which is described on another page, it is quite probable that Mrs. Schröder is aiming to tell the truth, fully believing she was assaulted as described. She is the daughter of a minister, and probably has an unblemished reputation for truth and veracity; yet her statement affords not the slightest warrant for any one to believe the assault was perpetrated. Her statement can throw no light whatever on the subject. But a man is killed, all the same; and a jury has acquitted the killer, as far as we know, on the testimony alone of the woman, which is no testimony at all.

“DEATH LOVES A SHINING MARK.”

WHEN a professional soldier falls in battle, we almost feel that there is a propriety in the manner of his taking-off. It seems to be a culmination of the contract. But when he whose occupation is a warfare against the encroachments of diseases is stricken down, in the active discharge of duty, we feel quite otherwise. These thoughts are suggested by the perusal of a brief news item, as follows: “DEATH FROM BLOOD-POISONING.—Dr. Thomas Wood, a prominent surgeon of Cincinnati, died November 21st, from the effects of blood-poisoning, caused by attending with chapped hands to the wounded in the recent railroad accident on the Cincinnati, Hamilton & Dayton railroad.”

Thomas Wood! our professional father and brother! Not strange that he was there on duty;—but how to realize that he is dead is what we have not yet learned. Our first visit to the Ohio College of Dental Surgery found him at his post, as professor of anatomy. At once we became his pupil, and at the same time his co-laborer, as we had been selected to fill the chair of chemistry,

made vacant by the prostration of that great philosopher, Elijah Slack, M. D., D. D., LL. D.; and the cordial, personal welcome given us by Prof. Thomas Wood placed us at ease in both relations, relieving us at once of all embarrassment. He could not have been more cordial had we been the equal of our great and illustrious predecessor. The warm, firm friendship then begun never cooled or relaxed.

Dr. Woods's reputation as a surgeon is as broad as civilization. In the surgical diseases of women, we believe, no one ever claimed to be his superior. But no eulogy is needed. His memory will be cherished till all who knew him are at rest, and his name will be a synonym of modesty and faithfulness in professional duty. He died in harness, abreast of his profession, with his looks forward. Peace to his ashes! a tear o'er his tomb!

IODOFORM.

Our dental brethren often find use for different preparations of iodine. When chronic swellings about the face are to be reduced, we naturally think of iodine, and we frequently, if not generally, resort to the simple or compound tincture. The former gives mainly local action, while the latter is not sufficiently concentrated to give us satisfactory results. We suppose the compound, named as our heading, would be used more frequently were it not for its offensive odor. It presents one of the mysteries of chemical combination. It is well known that iodine is a local irritant, and if forty-two parts of it were mixed with one part of charcoal, the mixture would still be irritant. But iodoform is a *combination* of iodine and carbon in these proportions, and the combination, instead of being an irritant, is a local anæsthetic. It can, therefore, be used on tender, sensitive, or even raw surfaces, with comfort and relief, where iodine is utterly inadmissible.

Iodoform is conveniently used in ointments. It can be mixed with lard or simple cerate, say fifteen or twenty grains to the ounce, but we would still have the objectionable odor. Dr. William Martin, a very popular and scientific druggist, of Cincinnati, tells us that the addition of a small proportion of tannin

destroys the odor. Also, in the "Ohio Medical Recorder," we find a formula which is said to accomplish the same end, thus:

"R. Iodoform, grs. xv
 Bals. Peruv., grs. xxx
 Mix."

"For an ointment, add vaseline; or for a solution, glycerine
 3 iij."

For tumors on the gums, the solution will probably be found the more pleasant; for external use, we should prefer the ointment. When the local action of iodine is desired, nothing better can be devised in the present state of knowledge.

"BE COURTEOUS."

THAT such advice is needed by any in our profession, in the afternoon of the nineteenth century, is rather strange. One of our most popular dental societies encourages the presentation of original papers. We have been somewhat startled by a report of remarks and discussions resulting from the introduction of such a paper, by a dentist not at the meeting, and probably not a member of the society. We are aware that reports of discussions, etc., are often very inaccurate. We presume the one in question is so, especially as we see no intimation that a certain speaker was called to order. The paper was presented in regular process, was duly inspected by the censors and recommended as worthy to be read, and was accordingly included in the report of the "section" to which it appropriately belonged. Thus far all seems to have been regular, and in accordance with established rules. But, when the paper was to be discussed, a well-known, experienced member of the association gave it a cordial and courteous (?) welcome, thus, as reported:—"Dr. ——— said, that in his opinion the censors who had inflicted the reading of this paper upon the ——— Association, needed to go to school," which is true of almost every one, including the speaker, possibly; but the statement of the fact in a manner so abrupt and offensive, would elsewhere lead to arrest for contempt of court. He goes on:—"It is abominable for a man who claimed to know something of natural philosophy, to go on with the wretched drivel, misconception and misstatement the

association had just listened to. Whoever the miserable wretch was that had written the paper, he was of the old foggy stamp, and had hidden under a mass of words a little information that could have been given in two minutes." We can't believe the member used such language. The reporter must have misunderstood him; yet it has gone forth on its errand of mischief, as if said to encourage other and younger members of the profession to insult and abuse the absent who presume to send a paper, after invitation to do so, as well as to wound the feelings of those present by forcing them to listen to such unmanly and unmannerly onslaughts. We are told that "PROF. BUCKINGHAM objected to Dr. —'s method of discussing this paper;" and this is doubtless true, for that is just like Prof. B., but Dr. — still justifies himself, saying "He had a right to speak of the paper as he had done;" and now we have the strongest proof that the reporter fails to take him correctly, as he reports him saying, "Only two compounds of mercury are known to be deleterious to the animal body." It is not probable that anybody believes that; and much less do we think a man so well informed as Dr. — can maintain it. Pereira and others tell us that "probably all the mercurial compounds are more or less noxious." Some except the sulphurets.

But we are not discussing a question of therapeutics or of poisons. We write to urge any and all members of our profession to forward papers to the local, state or national societies, whenever they have thoughts or suggestions that may be useful to their brethren or to their fellow men. Neither we nor Dr. — will live always; and, after our departure, no one will be left in the profession to give a volunteer paper, forwarded in answer to invitation, a reception so calculated to wound the feelings of the writer. The rest of the profession believe "a man's feelings are the tenderest part of him."

EXPLANATORY.

IN the years gone by we have received very many private letters, asking for our opinions on various matters, scientific and professional. Nearly all were from special friends, and, a heavy proportion indeed, from our former students. In our then help-

less state, all had to be treated alike—that is, with the apparent coldness of absolute neglect. This was not in accordance with our feelings or wishes, but what could we do? Working harder to get six breaths a minute than we ever worked in a harvest field, where we passed for a premium hand, we had not strength to spare even to write back that we couldn't write back. But now with the regain of some degree of health, we may not always have time to write private letters, but the energy and generous confidence of our publishers, give us a medium through which we can often answer a variety of questions in a single effort. Send on your questions now, brethren, and we shall endeavor to have them answered in due time in the pages of the JOURNAL. When not able to answer directly, we can submit the question to others.

THANKS! THANKS!!

THERE is often a feeling of loneliness in research after science. A longing for the facts and principles underlying them takes possession of the mind and soul, till by mere mental concentration the individual is lost to the social ties of his professional peers. He ceases to be company for them, and they are scarcely congenial to him, unless he can use them, or they can help him in his special scientific pursuit. This may, to some extent, explain an apparent—we hope not real—lack of cordiality and affability in professional intercourse with our brethren. We feel the strength of friendship's ties more strongly than ever, but the constant endurance of physical pain, added to as constant a devotion to the solution of the facts involved in the chemistry of caries and salivary calculus, may have sometimes prevented a due manifestation of the friendship felt. In seeking the principles and evolving the facts, as referred to above, we often felt discouraged and lonely; and truth, when brought to full view, always appears so simple, we could scarcely expect our brethren to fully appreciate the toil and trials involved in the search after it.

But the flash of friendship's light from the electrified hearts of our hearers, at the late annual meeting of the OHIO STATE DENTAL SOCIETY, dispelled the darkness of doubt, and the gloomy foreboding as to toil and care unappreciated. During the short

lecture given there and then (short only when compared with the magnitude of the subjects considered), the attentive listening, the earnest sympathizing looks of the listeners, the absolute quiet of the audience, made the delivery of the lecture as easy as the air on a crank organ. And for all those, thanks! And for the practical proof of appreciation (not folded in a napkin, but done up in an envelope), handed us after the Society had adjourned, Thanks! Thanks!! And what can we say more? Tell us, and we'll say it. May the Giver of all good give good gifts to each and all who thus let in the light to a heart somewhat dark.

ANÆSTHESIA LAW IN OHIO.

“SEC. 6990. Whoever uses upon another an anæsthetic, unless at its administration, and during the whole time the person is wholly or partly under the direct influence of it, there is present a third person, competent to be a witness, shall be fined not more than twenty-five nor less than five dollars.”—*Revised Statutes of Ohio*.

Thinking it quite probable that many of our readers have not seen the Statute above, it is inserted for their information.

ED.

STARTING AN ENTERPRISE.

BEGINNERS often lay out more land than they can cultivate, just as the backwood's boy, in dividing an apple with his comrade, bites off more than he can chew. We feel the danger of such a fate, while worrying among the varied details of our first number. So much of explanation, so much personal to the editor or to the publishers, the adoption of departments, the classification of matter to fill them respectively, as well as respectably—these, and scores of other things, make the first number more difficult, and less scientific, than following numbers are likely to be. We ask for a moderate degree of patience on the part of our readers. We are not altogether without experience, but the editorial pen needs a little sharpening, after which we expect it to run with its old freedom. In coming numbers we hope to give scientific and practical subjects much more attention than is

indicated by this one. Also, we expect more help, and consequently a greater variety of matter hereafter. After such a long retirement one would think the position of editor could not appear otherwise than new to its occupant, but so far we find it like swimming. When the art has been once acquired it comes natural to strike out as soon as thrown into deep water. Whether we can swim as well as before is left for time to determine.

OUTVOTED.

OXYD or oxide? Which? We prefer, and have used, the former. We like it better, and expect to. But the English, or American, is a living language, and must therefore submit to usage. The vote has been a fair one—no stuffing nor tissue ballots—and we are outnumbered and yield, taking the iron-clad oath with only this mental reservation: That if occasionally we forget, and spell the word correctly, as of old, we are to have the benefit of clergy before execution. But we don't wish to be bulldozed into the adoption of another specimen of awkwardness. We still commend good old Quaker Lindley Murray for teaching that *a* becomes *an* before vowel sounds, hence it annoys us for one to say *a* youthful fool, and *an* useful tool, the article preceding the consonant sound of *y* in both phrases.

JAMAICA DOGWOOD.

THIS article is not new in materia medica, but it seems to have been but little used for a number of years. It first attracted attention mainly for the relief of toothache. In many cases of neuralgia it relieves the distress with the utmost promptness. In our own experience we find this especially true, when branches of the fifth pair of nerves are involved, but the action has been satisfactory with the sciatic. When acting favorably we have found it more prompt than opiates, and there is no feeling of nausea and depression, as with opium, when its effects are passing away. When the toothache is caused by congestion of the pulp, or periosteal vessels, we have found it relieved by a full dose of the dog-

wood in from five to fifteen minutes. A pleasant feeling of warmth pervades the patient's system, and the pain abates as if spontaneously. The patient on this account often fails to give the medicine due credit. We have used only the fluid extract, and this we have found varying in strength. In a severe case we give an adult two teaspoonfuls at a dose, directing another teaspoonful to be taken in a half hour, if necessary. We can now recall no case in which the second dose has been required. We regard it as an important acquisition to dental therapeutics. Further investigation must be made to enable us to select the cases to which it is adapted. We have depended on its constitutional action, but it is highly recommended as a local application to exposed pulps, when congested or inflamed. We have no experience in this direction, and we hope our brethren will try it and report through the JOURNAL.

XENIA ACADEMY OF MEDICINE.

THE first paper in this number was read at a meeting of the above society; and this leads to the remark that we have never seen a better illustration of the advantages of association than is here afforded. The editor has the good fortune to be an honorary member of it, and has been intimately acquainted with each and all of its members. In clearness of thought, and in professional attainments, the members are not like the same men, when compared with themselves previous to the formation of this society. It has but a few members—the regular physicians of our little city, though others in neighboring villages are not excluded. The society meets two evenings in each month, except in a summer vacation, in rotation, at the offices of the members. A paper is read and discussed at each meeting, cases are reported and counsels are held over them, special books and instruments are bought and held by the academy, so that members derive as much profit from them as if each individually owned them. Now, all this is not a heavy tax on time and effort, and the results are invaluable. The editor is happy to be able to testify, from personal knowledge, that there is a remarkable increase of professional attainments among the members; and the principal object in mentioning the

matter is to induce the dentists of the various towns, cities or villages, to follow the good example. If there are but three of you, brethren, meet regularly and compare notes and exchange opinions and ideas. You will gain in every way by so doing, and, not the least important idea, you will like each other better.

OHIO STATE DENTAL SOCIETY.

A SINGLE day was all that we were able to spend with this, the queen of dental societies, at its late annual meeting; but, in the enjoyment of that day, we were more than repaid for the risk and toil of a journey to Columbus. How any dentist, who has health to attend, can afford to be absent, is more than we can explain. Many familiar faces of veteran members, who are never absent, greeted us; but it was a solid pleasure to see so many young members present. They were blessing themselves, and prospectively benefiting their patrons by their attendance. Judging by the recollections of our own experience, it will take the whole year for them to learn just how much they have been benefited by the meeting. A special case would present itself, and, at first, we would feel somewhat at a loss; but the recollection of a remark at the last meeting would at once lift us above the plane of doubt into the clear, bright atmosphere of solved science. We congratulate the society as well that it was graced by their presence. Of very many of us it will soon be said, "The fathers! where are they?" but the good society will, instead of the fathers, take the sons and make them leaders and princes in the warfare against diseases of the oral cavities. Such young men are the hope of our profession. Those who remained away, without the most valid excuse, afford us but little hope that our mantles will have fortunate falls if they must alight and rest on them.

MISSISSIPPI VALLEY ASSOCIATION.

PREVIOUS to our next issue this old society will hold its annual meeting, as usual, in Cincinnati. We feel a peculiar interest in this association. Attendance on its annual meeting in 1852 was our introduction to the dental profession. It had copied the old

American Dental Society in holding its meetings at the close of summer, or in the early autumn. It had also adopted the migratory idea of the old society, though, we believe, its meetings had so far been either at Cincinnati or Louisville. At its meeting in 1852 but two new members were received, and from these came the idea of permanent location and change of date to the closing of the college session. They induced one of the older members to suggest the changes, and they were followed by greatly increased attendance. The meeting of the stockholders and friends of the college the same week, was calculated to bring a greater number of dentists to the city, and the only objection to the plan is that it is sometimes difficult to arrange the sessions of the two societies so that they may not conflict with each other. As yet, however, we have not seen or heard of any dissatisfaction from this source.

This is, and has been since 1856, the oldest dental society in the world, and most of the others have, to a great extent, copied its order of exercises and proceedings, so that active members of the old society feel at home in any other one. We hope as many of our readers as possibly can will attend the coming meeting. Since we joined it, in 1852, we have not missed a meeting, except when prevented by illness, nothing else seeming to be a valid excuse for absence. If necessary to economize, wear plainer clothes, do without cigars—but don't neglect this opportunity to store your minds with solid science and useful art.

NEW TREATMENT OF DIPHTHERIA.

THIS is not dental, but as dentists are human, and so have dearly loved ones subject to this dread plague, we make no apology for the insertion of a brief article on the subject. Dr. Guttmann is high authority, and this treatment is highly endorsed by Professor Roberts Bartholow in his late course of Cartwright Lectures. Where he leads, others can afford to follow.—ED.

A NEW REMEDY IN DIPHTHERIA.

DR. GEORGE GUTTMANN, CONSTADT.

KNOWLEDGE of the physiological action of pilocarpin and of its effects upon bronchial catarrh, giving rise to moist rales, led me to

believe that administered in diphtheria, it might loosen the diphtheritic membrane through the induced abundant salivary secretion, while it would not excite any inflammatory condition. The result of the proposed treatment was above all expectation brilliant and striking.

April, 1879, an entire family of seven fell sick, one after another, with diphtheria; three exhibited the severest typhoid symptoms. The second case I treated with pilocarpin in moderate doses. The next day I found a copious salivation, and fragments of pseudo-membrane floated in the expectorated matters. Pilocarpin was administered, also, to the other five patients. In addition, the usual general treatment was followed; quinine, tannin locally, gargles of lime-water and pepsin. The patients recovered in from two to four days.

Since these first cases down to August, 1880, sixty-six cases of diphtheria (*rachenbreune*) have come under my care; fifteen exhibited the worst of the diphtheritic symptoms, of which, according to my previous experience, at least two-thirds would have certainly died; thirty-three would be termed bad cases, the membrane being extensive; the remainder were slightly affected. I gave pilocarpin to all, only in the first cases, quinine and gargles, also; they recovered, as a rule, in periods of time varying from twenty-four hours to three days; of the fifteen worst cases, two recovered in nine and eleven days, the rest in two to five days. All patients who came early under treatment, while the pseudo-membrane was still loosely adherent, without exception, were cured in within twenty-four hours. The doubt that these cases were not truly diphtheritic is not to be raised, since they were examined with the utmost care, and in the worst cases the contagion could be distinctly traced. Under the action of the pilocarpin, not only were the membrane and infiltration dissolved in the salivary flow, but also the violent inflammatory condition yielded to its influence, the deeply reddened, dry, mucous membrane soon became moist, pale red and in every respect of normal appearance.

Led by these results, I prescribed pilocarpin in violent pharyngeal cases, angina aphthosa and tonsillaris, always with most happy results, the disease yielding in a short time. In two cases of violent tonsillitis, in which the tonsils were so swollen that water could be taken only with great difficulty, and scarification was

positively indicated, not only did the swelling disappear, but the entire group of inflammatory symptoms, the one in twenty-four hours, and the other in thirty-six.

In the few cases of membranous croup that have fallen into my hands during the past fifteen months, pilocarpin has proved a faithful ally, and I believe it will prove as effective as in diphtheria of fauces.

Two cases of laryngitis stridula yielded promptly to the same drug, which is safer and more convenient than the usually prescribed emetic.

Others have used pilocarpin under my advice, and agree with me in maintaining its excellence in diseases of the nature described. In the administration of this remedy I combine pepsin to combat the gastric catarrh usually present. My formula is as follows:

R.

1. Pilocarpin muriat.....	gr. $\frac{1}{3}$ — $\frac{2}{3}$
2. Pepsin	gr. j—i $\frac{1}{4}$
3. Acidi hydrochlor	gtt. ii
3. Aquæ dest.....	$\frac{7}{8}$ iiss

M. Sig. A teaspoonful hourly for children.

For adults.

Pilocarpin muriat.....	gr. ss-j
Pepsin	gr. xxx
Acidi hydrochlor.....	gtt. iij
Aquæ dest	$\frac{7}{8}$ viij

S. Hourly, a tablespoonful.

I have never observed any undesirable effects of the drug even when it has been continued until complete recovery, possibly because I give a small amount of generous wine after each dose.—*Berlin Klin. Woch.—Cour. of Med.*

EDITORIAL REMINISCENCE.

THE handling of the pen editorial, in the years gone by, brought us into direct contact with co-workers, wielding the same weapon in waging warfare against the battlements of professional ignorance. But where are they now? Shall we call the roll of active editors, whose tripods stood with ours on the platform of professional literature in those busy years of active life and labor?

Harris, C. C. Allen, Piggott, McCurdy, J. D. White, Leshe, McQuillen, Barker, Clark, Wildman, Westcott,—but memory fails with the formidable list. Mother Earth has gathered home these, her children, yet

“Dust thou art to dust returnest,
Was not spoken of the soul.”

Were it otherwise, we should feel like the psalmist's sparrow, alone on the housetop, or like the little song-bird

“That sat alone, on a lonely tree.”

We rejoice that the reaper, “with his sickle keen,” has not harvested in our veteran predecessor, Professor James Taylor, who, though no longer an editor, is in full harness as a teacher; nor has he gathered to himself, our co-worker on the *Dental Register*, who has never left his post, and who is as active as ever—a teacher and practitioner, as well as an editor. And there, too, stands the veteran ex-editor of the *Dental Times*, Professor T. L. Buckingham. Well, we have seen stately oaks stand, after the surrounding forests had fallen, as if waiting for a stroke of lightning to ease them down; and we have seen men so full of good works that they seemed all too busy to die, or even grow old. And when we see these men, and others like them, working for good, with all the fire of youth, we, too, feel young, take fresh courage, and grasp the editorial pen with the energy of the olden time.

Were it not that in the weary years of our quietude, we diligently read the professional journals, both medical and dental, our new venture would be like going to work among strangers. We shall be glad to have our older brethren rally around us in furnishing reading matter for our journal; nevertheless, the young will be quite as welcome to our pages, whenever they have anything worthy of publication. Our younger brethren have had opportunities and privileges in the way of obtaining knowledge, not enjoyed by their fathers and older brethren. For this reason they may be, sometimes, more competent to discuss technical and theoretical points than those who are older, while the experience of the latter class cannot fail to be valuable in that which is strictly practical. Bearing these distinctions in mind, we hope our brethren, of both these classes, will do all that legitimately devolves on them for the advancement of the science and art of our profession.

We hope soon to be as well acquainted with the present and new-workers and writers in the profession as we were with those who have gone before. "Men may come, and men may go," but the good work goes on forever. That we may be able, each one, to give it a helping hand, is a desire worthy of the highest hope. A life consecrated to such an aim is a sacrifice appropriate to the cause.

ONE MORE DECISION.

IF time and space are infinitely divisible, there is no period so brief nor space so small that half of it is nothing. Think, then, of an infinite half inch or an eternal second. But such a thought is mere commonplace compared with the eternal rubber company nuisance. This company, in time, would have laid claim to the *horns* of the moon, inasmuch as horns can be worked into plates, and also because vulcanized rubber is described as "horny."

But a little backset has been administered. In the October term, of 1880, of the Supreme Court of the United States, in the case of "The Goodyear Dental Vulcanite Company, appellant, *vs.* Charles G. Davis," Mr. Justice Strong delivered the opinion of the court, which is too long for our space, but a very brief extract will be satisfactory to our readers. Says Justice Strong, "It remains to inquire whether the manufacture, by the defendant, of dental plates, out of the material known as celluloid, or solid collodion, is an infringement of the Cummings re-issue. We think it is not." * * *

"Nor is celluloid an equivalent for hard rubber, for the reasons already suggested, that it is not capable of vulcanization, and that it can not be made into a plate by the process prescribed by Cummings. It may be conceded the patentee is protected against equivalents for any part of his invention. He would be whether he had claimed them or not. But when a product arrived at by certain defined stages or processes is patented, only those things can be considered equivalents for the elements of manufacture, which perform the same function in substantially the same way. The same result may be reached by different processes,

each of them patentable, and one process is not infringed by the use of any number of its stages less than all of them.

"In view of these considerations, we are constrained to rule that a celluloid dental plate is not an infringement of the Cummings patent. Celluloid is not an equivalent for the material which the patent makes essential to the invention, and in the use of it for a dental plate, the process which is inseparable from the invention, is not, and can not be, employed. The decree of the Circuit Court is therefore affirmed."

It is difficult to see that common sense would tolerate any other decision; but the ways of courts and other judicatories are winding and mysterious to the uninitiated, to the extent that has rendered "As uncertain as a lawsuit" a familiar proverb. If our ears were guaranteed a rest from hearing of rubber suits we would be tempted to adopt the pious phrase of good old Simeon when the babe of Bethlehem was presented in the temple.

May rubber suits be limited to such as are on sale in the clothing stores.

SALICYLIC ACID.

BUT few therapeutic agents meet as many wants in dental practice as does this acid. It is not highly soluble, or it would doubtless be used oftener than it is. It is so mild in its local action, in comparison with carbolic acid, that the dentist fails to have the confidence in it that he has in the latter; yet in some respects it is quite as active and efficient. It dissolves in very many saline solutions much more freely than in water; and on this account it readily dissolves in the fluids of the mouth, when used as a local application. It very readily and freely cauterizes aphthous ulcers on the mucous membrane of the mouth, and that without the severe pain following the use of carbolic acid. When in perfect solution it is quite as good a disinfectant as carbolic acid. To effect this solution, we have been in the habit of combining it with small portions of carbonate of soda and white sugar. Thus combined, we have a most excellent preparation for spongy guns, with fetid, or ammoniacal breaths. It may be used with the brush, and gargled, or, better, applied to the throat with an atomizer.

The *Louisville News*, some time ago, gave a formula, which, the editor claims, gives a perfect solution—"the best solution of salicylic acid he has ever used." For some purposes, it is so important that it be in solution, that this formula should be adopted and kept by all dental practitioners. The preparation may be made thus: Take of salicylic acid, 640 grains; citrate of potash, 960 grains; glycerine, 3 fluid ounces; simple elixir, sufficient to make a pint. Dissolve the citrate in the glycerine by the aid of a gentle heat, then stir in the acid, continuing the heat till it is completely dissolved. When cool, add the simple elixir, till the whole measures one pint, and strain. This solution contains five grains of salicylic acid to each fluid drachm, and it can be mixed in any proportions with water without precipitation.

We have given the formula for this solution in a shape we thought better for our readers, who may not be familiar with the art of prescription writing, while it will answer equally as well for others. Any of our readers can have it prepared at a drug store. If less than a pint is wanted, the figures can be changed to any extent while the proportions are carefully kept. When used in the cavity of the antrum, this solution will ordinarily bear dilution. As a disinfectant in hollow teeth, it may be applied in full strength. But, we need not enumerate. When a perfectly reliable solution of the acid is thus obtained, our readers can each think of hundreds of cases where it will prove both useful and convenient.

MURDER AND SUICIDE.

"ONE more unfortunate,
Weary of breath,
Rashly importunate,
Gone to (his) death."

Yes! gone to his death, after having sent before him, to her death, one who should have been to him a "nearer one, still, and a dearer one."

The evening of the 29th ult., Dr. W. F. Harbaugh, a dentist, formerly of Dayton, Ohio, but more recently of Piqua, shot his wife through the heart, and again through the head, with a navy revolver, and afterward shot himself with a double-barrelled shotgun. The wife was killed in the presence of their little four-year-

old daughter, who was heard entreating him not to kill her mother. He left the little daughter with her dead mother, and went to an upper chamber to kill himself. Previous to the tragedy he had taken his two sons to the office and locked them in, showing in this a murderous premeditation truly sickening. We suppose the mental agony of childhood reached its climax, with that little baby-girl, in the dreadful scenes of the murderous tragedy.

As yet we have no explanation of the horror, except that obtained from the daily newspaper; and in that the whole affair is credited to strong drink. It is claimed that Dr. Harbaugh was a kind husband and father, till led astray by a depraved appetite. If this is true, "we are, verily, guilty concerning our brother." No fact in pharmacy is better known than the tendency of alcohol to paralyze the will power. When the will power has become totally paralyzed, the victim has reached the dead line, from which no one can return without help outside of his own efforts. As well might we expect a paralyzed man, tied on a raft, without oars, to float up stream, to avoid going over the cataract, as to expect such a wretched victim to reclaim himself without help. But, as usual, we have looked on with practical indifference while our brother has floated to ruin, taking his family down with him as far as was in his power.

In view of the fact that alcohol is only a convenience, but in no sense a necessity, why not rise in our might and totally banish it?

EDITORIAL RESPONSIBILITY.

. WE have never seen a man brave enough to let a pretty woman see him make faces at her baby. He may face the enemy, march up to the cannon's mouth, lead a forlorn hope, storm the breastworks, scale the battlements, beard the lion in his den, rouse the tiger from his lair, pop the question—yes, all these and more; but he'll not tackle the baby if its pretty mother is watching him. But the editor must have the courage to do all these, and to snub the baby besides. For, when a man writes an article on his favorite subject, he puts his mind and soul into it, and becomes so wrapped up in, and identified with it, that it is to him as the first-

born babe to its beautiful young mother. He reads his article again and again, and every word and phrase becomes more deeply endeared to him, with each perusal. The young mother has just the "pootsie-tootsiest" baby that ever was kissed, and he the finest article ever written. And now,—if the editor should reject it? "He can't do it! Of course he can't;" and yet, after all, it is possible he must. And even if he must; that is not evidence in itself, that the article is not a good one. It may possess all the merit that its author would claim for it; but, on account of difference in taste, the editor may fail to appreciate it. He may not have room for it; or it may discuss a subject that has already been allowed all the space due it; or, for sake of variety in matter, it may be found necessary to exclude it, while something of less merit is inserted; or it may bear keeping, being good for any time, while others must be inserted while their subjects are fresh, or not at all. It by no means follows that a delayed or rejected article lacks merit.

In accepting or rejecting contributions from our friends, we shall endeavor to act justly toward all concerned, whether writers, readers, or publishers. We hope our friends will cheerfully confide to us their contributions. Let us say, you all have thoughts and facts worthy of the attention of your brethren. It will afford us sincere pleasure to aid you in laying such before them, through the JOURNAL. If at any time we find ourselves unable to use matter furnished us, we shall return it to the author, or dispose of it as directed. Our course when on the *Dental Register*, ought to give confidence in this direction. We are unable to recall a single case of dissatisfaction in reference to our treatment of contributions from our professional brethren. We hope our friends will help us to make the new JOURNAL rich, readable and original.

REPORT OF DISCUSSIONS.

THE Mississippi Valley Association of Dental Surgeons, will hold its annual meeting before the issue of the next number of the JOURNAL. * The discussions of this old, experienced society, have been, in the years gone by, the best of their kind. It has been difficult to do them justice in the way of reporting. When a

professional reporter is obtained, he is usually unacquainted with the technical terms, and hence many mistakes occur. Or if a condensed report, or synopsis, is wanted, for lack of a knowledge of our science, he is as apt to omit the best as the worst,—indeed, more apt; for that which is light and trivial is more easily caught, than that which is deeper, and more scientific. Even when a *verbatim* report is furnished, it gives nearly as much trouble to the editor to get it into shape, as to make a new report.

But if a ready writer, of our profession, is detailed for the duty, he can scarcely avoid listening for himself, at least, we may say, such efforts in the past have not been very satisfactory. The JOURNAL will not have room for a *verbatim* report; but we expect, in some way, to give our readers the best points of these discussions in the April number. Of course, we never mention it; but do really hope to be able to make our own report. If able, we shall try to make it exactly right. At all meetings, many things are said that sound pleasantly, and help to pass the time, which are not worthy printing: and, therefore, not worth writing. Such, we shall try to omit—but why say any more, where it is quite possible that, personally, we shall have to omit all. In any event, however, the readers of the JOURNAL may expect a good report.

Societies.

“Two are better than one.”—SOLOMON.

AMERICAN DENTAL ASSOCIATION.

Organized 1860.

Meets annually—next meeting in New York, first Tuesday in August, 1881.

President—C. N. Peirce, Philadelphia.

Recording Secretary—George H. Cushing, Chicago.

Treasurer—W. H. Goddard, Louisville.

OHIO STATE DENTAL SOCIETY.

Organized June, 1866.

Meets annually, in Columbus, first Wednesday of December.

President—C. H. Harroun, Toledo.

Recording Secretary—W. H. Sillito, Xenia.

Treasurer—George W. Keely, Oxford, Ohio.

MISSISSIPPI VALLEY ASSOCIATION.

Organized 1845.

Meets annually, in Cincinnati, first Wednesday in March.

President—H. M. Reid, Cincinnati.

Recording Secretary—E. G. Betty, Cincinnati.

Treasurer—J. G. Cameron, Cincinnati.

MICHIGAN STATE DENTAL SOCIETY.

Organized 1856.

Meets annually, last week in March. Next meeting in Detroit.

President—J. C. Parker, Grand Rapids.

Secretary—M. F. Finley, Ypsilanti.

Treasurer—J. Lathrop, Detroit.

KENTUCKY STATE DENTAL SOCIETY.

Organized 1870.

Meets annually; next meeting in Lexington, first Tuesday in June, 1881.

President—J. S. Cassidy, Covington.

Secretary—C. G. Edwards.

Treasurer—J. F. Canine, Louisville.

NORTHERN OHIO DENTAL ASSOCIATION.

Organized 1860.

Meets annually; next meeting in Cleveland, second Tuesday in May, 1881.

President—Charles Buffett, Cleveland.

Recording Secretary—L. C. Kelsey, Elyria.

Treasurer—J. E. Robinson, Cleveland.

CINCINNATI DENTAL SOCIETY.

Organized November 30, 1880.

President—W. S. How.

Secretary—A. G. Rose.

Treasurer—N. S. Hoff.

INDIANA STATE DENTAL SOCIETY.

Organized,

President—Robert VanValzah, Terre Haute.

Secretary—W. H. Hall, Terre Haute.

Treasurer—Merit Wells, Indianapolis.

AMERICAN DENTAL ASSOCIATION DISCUSSIONS.

At this late day it would not be advisable to give space for a full report of the discussions, papers, etc., of the last meeting of this society; yet we feel that our readers can be edified by select thoughts from this source, with appropriate comments to accompany them. We have the reports of the *Dental Cosmos*, and of the *American Journal*, before us, and shall use them to some extent, premising that while they are probably as accurate as such things are apt to be, yet we do not hold any speaker strictly accountable for what he is represented as saying.

The morning of the second day, Dr. H. J. McKellops offered a series of preambles and resolutions, the general import of which can be gathered from the last "whereas," with the resolution, thus:—

"WHEREAS, There is a peculiar impropriety in professors lending their names to the advertisements of these or any other compounds, inasmuch as charlatans lose no opportunity to exhibit and parade the names of these professors before an ignorant commun-

ity, in justification of their constant use of an inferior material for filling teeth; now, therefore, be it

Resolved, That this association discountenance, in a formal and emphatic manner, the pernicious practice of members of the profession, but more especially those holding high positions in our schools, of allowing their names to appear in advertisements as indorsing either any special material or compound for filling teeth, or any therapeutic agent whatsoever."

Dr. Atkinson's feelings were in accord with the spirit of the resolutions, yet he thought they should be explained and digested before voting either for or against them. If aimed at Chase and Flagg, why not say so! We might deprecate the fulsome self-sufficiency of these men, but should not follow their footsteps by denunciation without due investigation. He thought every man with a soul had been pained by the idiocy of their published claims, but who is yet competent to take the statistics of treatment and pronounce, *ex cathedra*, the final judgment.

Dr. Darby thought the spirit of the resolution did not condemn any one material, but rather the habit of indiscriminate indorsement. He hoped the resolution would receive a unanimous vote, and that soon materials for filling must rest on their individual merits.

Dr. Morgan regarded the matter as a question in ethics, and thought it was covered by a clause in the code. He hoped the resolution would pass.

Dr. Allport thought these recommendations were often given under the impression they would not be seen by the profession. He was unwilling to believe any honorable man would give one as an equivalent for goods received.

Dr. McKellops sent to the secretary's desk a dental journal with an advertisement of a filling material recommended by the signatures of seven dental college professors. [Not aimed at Chase and Flagg, only, then.—ED.]

Dr. Barrett inquired if members knew of cases in which private correspondence had been betrayed to gain such indorsements. He had been so treated himself.

Dr. Mills claimed that, in justice to the profession and the public, good materials should be recommended according to their merits. He had given a testimonial, knowing it would be printed and maintained his right to say and do what he did.

Dr. Buckingham said a nice point is involved. A party had called on him for a recommendation which he refused to give because the formula of the preparation was withheld. Without the formula how could he know its properties, or that it would afterward be prepared so as to preserve its identity? He thought the recommendations of secret preparations should be condemned, and that we should be as careful in signing a recommendation as if it were a promissory note.

The resolution was adopted, Dr. Atkinson voting in the negative, and explaining his vote that he thought the mere publication would be sufficient to accomplish the object in view, without the necessity of a vote.

REMARKS:—We think the preambles and resolution of Dr. McKellop's were timely. It has the appearance of fraud for one to recommend a material or compound about which he is ignorant. But, after all, many are but little, if any, better off when the formula is given. They may be ignorant of the constituents, as to their individual nature, and also ignorant of their influence on and over each other when combined. Yet the spirit and general tenor of the resolution suits us.

We have known private correspondence to be both betrayed and mutilated to gain something in the shape of an indorsement, when the writer had not a thought in the direction of commendation. In our own experience this has occurred more than once. We said in a private letter, speaking of a dentifrice, "we regard it as good for nothing," which was neatly curtailed into an indorsement by clipping off the words "for nothing." And, in reference to a dose-book, or something of the kind, we said, "It is, really, *multum in parvo*; that is, much in the number of and danger from its mistakes, in very little space." "Really a *multum in parvo*" is all the publisher could find room for in his collection of printed puffs.—ED.

Dr. Morgan, in speaking of catarrh of the antrum, and of graver conditions of this important cavity, said we occasionally see the disease developed in a far more serious form; with pains in the face and along the spinal column, and accompanied with dizziness, causing the condition to be mistaken for softening of the brain. In such there must be constitutional treatment, and especially if the patient have a scrofulous taint. Build up the constitu-

tion then, as there is likely to be necrosis of the bones. An old gentleman was cured in ten days by opening into the cavity and applying mild escharotics. Another—a strumous patient—was cured in six weeks by opening and cleaning out the cavity and toning up the general system. This case had been diagnosed as softening of the brain.

Dr. Werner objected to the use of escharotics in necrosis of the bones of the antrum. Warm water and salt is grateful to the patient. He would keep the parts warm and clean, and avoid irritation.

Dr. Atkinson thought we would hardly go astray if we knew what irritation is. It is the friend that operates the function of nutrition, and, if pushed beyond the point of healthy nutrition, we have inflammation. Don't depend on warm applications—use hot or cold. You can get necrosis only when there is constitutional deterioration of tissue, and then your remedy is surgical. Support your patient, and keep in mind the cause rather than the location of the disease.

Dr. Werner inquired if there could be inflammation without constitutional deterioration.

Dr. Atkinson replied that no animal in a state of nature ever has inflammation when wounded, nor has a healthy human being. In each the wound heals by first intention.

REMARKS:—We have sometimes noticed indefiniteness of thought as to escharotics. The term is sometimes used as synonymous with antiseptics or disinfectants. When escharotics are quite diluted their action is often equivalent to that of alteratives or antiseptics. Farther light in this direction can be obtained from "WATT'S CHEMICAL ESSAYS"—article, "Topical Remedies." As a general rule, we think the local treatment in diseases of the antrum is far too active. We believe this is true of the treatment of morbid states in the oral cavity as well. The doctrine has still a wider application: the treatment of most chronic diseases, whether by physicians or dentists, is very often much too energetic. We hope this remark will do good to the afflicted, through the enlightenment our readers will gain by careful thought on the subject thus suggested. But we are much pleased with the clearness of thought evinced in these discussions. They are not much like those of twenty-five years ago.

The section on operative dentistry invited the venerable Dr. Joshua Tucker, of Boston, to address the association. The "fathers! where are they?" Well, verily, here is one of them, probably the oldest practitioner of dentistry now alive. Of course he was received with applause. Dr. T. stated that he is more than ever convinced that the older method of filling is preferable. He had condemned cohesive gold and the mallet at first, and he does so still. Condensing cohesive gold with the hammer, he claimed, dams the open ends of the tubules and stops exudations from within. He thought the saving property of the filling lies in not damming these tubules. If this is so, the soft gold is decidedly preferable.

Dr. Allport was pleased with Dr. Tucker's views as to soft gold. Cohesive gold has its uses, but none of these lies in the direction of filling cavities. Good fillings could be made with cohesive gold, but he thought the average operator would do better work with the soft. He said the chief requisite in arresting decay, is to exclude moisture.

Dr. Morgan asked Dr. Allport for his idea for a perfect filling. Dr. Allport replied that by a perfect filling he means one that will longest preserve the teeth, and that it was essential to have the gold absolutely fit the walls of the cavity; that he used soft gold everywhere in filling cavities, formerly used cylinders in cylindrical cavities, but now mainly uses pellets of irregular shapes.

Dr. Morgan wished to protest against Dr. A.'s assumption, which seemed to imply, that because he could not do good work with cohesive gold, others could not. As to himself, though he used soft gold, he could make good fillings with cohesive. It could not be demonstrated that fillings put in forty years ago are better than those of the present day. Twenty to twenty-five per cent. of the teeth now saved with cohesive gold, would have been consigned to the forceps, by the best operators, thirty years ago.

Dr. J. Taft was surprised to hear that cohesive gold can not be adapted to the walls of cavities. He claimed it was as adaptable as non-cohesive. He had not known gold as heavy as No. 240 used, except as an experiment; but he had known Nos. 20, 40 and 60 used where non-cohesive could not be used.

Dr. Atkinson stated that some member had said all diseased

dentine should be removed from cavities before filling. This should never be done when a pulp will be nearly or quite exposed by so doing. The material used had less to do in giving good results, than skillful manipulation and correct knowledge of principles.

REMARKS.—This latter statement of Dr. Atkinson is exactly in point, and atones for many untimely remarks made, evidently, through the impulse of the personal enthusiasm pertaining to his constitution. It is plain to all close observers, that good fillings are daily made by the use of both varieties of gold. But the fact should never be overlooked that time, alone, is not a test of the quality of fillings. To-day we saw a lower molar tooth which began to decay rapidly in the spring of 1856. The decay was arrested without filling with anything, and has made no progress since June of that year. Had this cavity been filled with soft gold, loosely put in, at the date referred to, an earnest claim for loose fillings might have been set up. The man behind the material and the instrument is the main factor in success. An artist, when asked with what he mixed his paints, answered, brains.

But space does not at present allow a more extended notice of these discussions. It is hoped they will be appreciated as far as given. When we get fairly started, we expect to be able to give the best of all the leading societies, omitting, for sake of brevity, all that is mere common-place, except when it must be included as incidental to a correct understanding of that which is more important.—Ed.

OHIO STATE DENTAL SOCIETY.

THE following was adopted by a rising vote, at Columbus, December 9, 1880, and ordered sent to the dental journals :

In Memoriam.

Since our last annual meeting, and shortly after its adjournment, the practitioners of dentistry throughout the civilized world were shocked and saddened by the announcement of the death, at

Paris, France, from congestion of the brain, of our esteemed friend and co-laborer, Dr. Samuel S. White.

Although distant from home, his last hours were cheered, and the bitterness of death was mitigated through the loving administrations of a son and daughter, who had accompanied him.

When the cable transmitted the intelligence of his death, many hearts were burdened with grief in sympathy with his bereaved family.

No words eulogizing Dr. White are needed here. His career is known to us all—a noble life. The sterling character of the man; the uniform worthiness of his aims; his energy and industry; his conscientious, earnest and persistent endeavors to benefit the dental profession, his upright and generous dealing, furnished an example worthy of imitation by us all. A record of his manliness and worth is engraved upon the hearts of all who knew him, and deepest in the memories of those who knew him best.

Cherishing appreciative and affectionate remembrances of our personal and professional relations with Dr. White, we desire to assure his family of our unfeigned sympathy with them in their affliction, and to place on record this testimonial of a sincere esteem and love for our departed friend.

F. H. REHWINKEL,	} Committee.
J. TAFT,	
G. W. KEELY,	

W. H. SILLIFFO, *Recording Secretary.*

Correspondence.

"I charge you that this epistle be read."—PAUL.

DR. GEO. WATT, *Editor of the Ohio State Journal of Dental Science.*

Dear Sir:—The occurrence of every new move, step, or enterprise in our profession, naturally produces in the thoughtful mind, an inclination to look backward, and also forward. As we have been personally familiar with, and in some sort, participators in

the work of the past, it is natural to contemplate the history, and about as natural to attempt, in imagination at least, to forecast the future. Now, do not become alarmed, for I will not inflict upon you or your readers, a history, nor even make reference to all the various steps of progress that have been made in the dental profession in even the brief period of my connection with it. But a word as to our periodical literature. The progress of the dental profession, during the last forty years, has been remarkable, and even a wonder to many ; and this, too, in spite of obstacles that ought not to have existed. This progress and development have been due quite as much, if not more, to the periodical literature than to any other single influence ; and this, too, when it has reached a very small proportion of those who claim to be in the ranks of the profession.

The regular readers of our periodicals do not embrace more than one-fourth of the whole number. Those who are not readers, gain something, perhaps much, by contact with those who do read. This, then, is one of the great obstacles to more rapid growth. Perhaps there is more than one-fourth of the whole number who take some journal or paper. But no one can lay claim to all the benefits derivable from our journals who reads but one, or even two.

There are many who receive one or more periodicals and put them aside without reading, and are unable, when called upon, to give anything of that which has been written. Some read superficially, others not at all ; and a few read, appropriate and apply thoroughly. The increase of our journalistic literature is a gratifying indication, showing that there is an increasing demand of some sort, and this increase will necessarily make more readers ; this will make more thinkers, more investigators and more who will well understand the capabilities of our profession, and be the better able to use its art and science for the amelioration of human suffering.

The want of a proper education and culture, is one of the great obstacles that stands in the way of a more rapid progress and perfect development in our profession. Ignorance and science are incompatible. Art refuses to associate with uncultured humanity.

Now, while our journalistic literature cannot do everything in the way of educating our profession, it can do something—yes,

much. The criticism has been made, that if it was better, more would be accomplished, which is true; but if that which is presented was better and more thoroughly used, vastly, greater results would be attained than are at present realized. The failure of our literature in the production of the highest results, is due far more to a want of appreciative readers, than to the character of that which is written.

Now, I have written this, not to give you information, for you understand the whole subject fully as well, if not better, than I; but if anybody's attention can or may be aroused by the presentation of the subject, the object of this writing will have been accomplished.

If we look back and see what has been accomplished by our journals, we cannot be otherwise than gratified. If we consider what, under more favorable auspices, might, and ought to have been accomplished, we will be discouraged and downcast. (But this, I suppose, is necessary, lest we become like Jeshurun.)

It is a matter of general gratification that you are again at the front in professional work, and are to aid in pressing onward and upward our profession.

Of the vicissitudes of journalism you are well aware. You were not in the harness for so many years, and still ignorant of the joys and sorrows that are as sure accompaniments as the type and press; you will doubtless receive many gratifying appreciations, and sometimes possibly—may they be few, if at all—evidences of criticism that may not be gratifying.

And now, my dear sir, I hope you will be equal to all the emergencies that may arise in this new and arduous undertaking, and that you may reap rich reward for your work, and in the great results that may accrue to the profession.

Yours, most truly,

J. TAFT.

CINCINNATI, OHIO, JANUARY 25, 1881.

THE DENTISTS IN CONGRESS.

THE *Congressional Record* reports among the petition presented in the House, January 14:

“By Mr. Monroe: The petitions of Dr. J. H. Peterson and of Rev. Willard Burr and others, of Oberlin, Ohio, against the

extension of the patent for the improvement of artificial gums and palates. Referred to the Committee on Patents."

Dentists, at least, will recognize this petition of Akron's senior practicing dentist, as directed against the claims of the vulcanite rubber men, who, it now seems, are trying, through the out-going members of Congress, to secure the renewal of these patents that have already exacted so much money from the dental profession and the public. Representative Monroe, however, can be counted upon as sure to stand by his constituents in opposition to this unjust demand.

Editor of the Journal—

Sir:—I desire to call your attention to the above clipping, and say that if the dental profession desire to throw off their shoulders the incubus, that, "like the old man of the sea," has burdened them for the past twenty-five years, now is their time or they must hereafter hold their peace. My wish is, that you in your forthcoming, first number of your JOURNAL, would say to the profession throughout the state: Write to your member of Congress, and say to him to use his influence to prevent the re-issue of the John A. Cummings' patent, No. 43,009, dated June 7, 1864, which patent will expire, by limitation, June 7th, 1881, and not to wait a single hour. Yours truly,

JAS. H. PETERSON.

AKRON, OHIO, JANUARY 20, 1881.

We hope our readers will give the most prompt attention to the suggestions of the above letter.—ED.

Editor Ohio State Journal—

Dear Sir:—From the well-known energy and enterprise of your publishers, I anticipate the new venture will be a decided success. If a success with the publishers, it can not well be otherwise with the profession.

After so long a vacation, will editorial work seem strange to you? or is it like swimming—once acquired, always retained? We who can recall your work on the *Dental Register* are quite ready to welcome you back into your old pathways. Those who are younger will soon learn to watch and wait for the JOURNAL, and many of them will regard the interval of two months as quite too long.

The subject of professional education seems to attract a good degree of attention at present. It will probably be more or less discussed in the JOURNAL in the coming year. The establishment of dental colleges in connection with some of the leading universities has called for a fresh agitation of the subject, and the question naturally takes the form, "shall we rely on dental colleges as such, pure and simple, or on medico-dental colleges, in connection with medical schools, for the education and development of dentists?" The discussion can scarcely fail to do good. As with water, so with society and professions; stagnation, and not agitation, constitutes the danger. I can see no objection whatever to both plans. Both give good results. The first dental colleges were organized, and, for a time, conducted exclusively by physicians; and in laying their plans and adopting their *curricula*, they recognized the same foundation sciences that are universally regarded as necessary to a medical school. They made provision for the study of anatomy as thorough as was made by the medical colleges. And the same is true as to physiology, pathology and chemistry. In this general description I have pointed out the character of the dental college here, of that at Baltimore, etc. That anatomy has not failed to be recognized as the foundation science, is seen in the character and standing of the professors of anatomy in this college. With sessions the usual length of those in the medical colleges, and with as many lectures in the course, has there been danger of its neglect, when taught by Jesse Judkins, Shotwell, Thomas Wood, Chapman, Clendennin, Kearns and others, their equals? Did pathology suffer under Mendenhall, J. B. Smith, Watt, and others! Was chemistry not recognized when that Christian philosopher, of world-wide renown, Elijah Slack, was elected to teach it? That the foundation sciences are in danger of being over-looked or not appreciated, in the colleges strictly dental, is suggested by only those who are unacquainted with their methods and workings.

But, on the other hand, the dental college under the fostering wing of a university has many advantages. It has, ordinarily, a comfortable endowment. (This you can appreciate, Mr. Editor, when you recall your long years of labor in our college here, performed at a pecuniary sacrifice.) A university has also cabinets, museums, instruments and appliances in greater abundance than

simple colleges are apt to have. The stimuli of association and competition may be greater in the university, and there may be advantages in this; but, after all, the attention may be thus diverted from special study, and this would be a disadvantage. I am glad to inform you that our college here has a large class. I have been told that it contains thirty or forty candidates. The close of the session is not far off.

For many years the Mississippi Valley Association of Dentists has met during commencement week. This arrangement will make the first week in March a busy one for the profession. The College Association and the Alumni Association meet also the same week. The Mississippi Valley Association is the oldest dental society. The College Association, as its name suggests, controls the college. The Alumni Association meets to have a good time generally. We all hope to see you at some or all of these meetings. But this is already much too long. With best wishes for the success of the JOURNAL, kind regard for your publishers, and hopes of long life and prosperity for yourself, I am

Truly yours,

E. G.

CINCINNATI, O., JANUARY 20, 1881.

Books and Pamphlets.

"I leave you here a little book."—JOHN RODGERS.

THE DENTAL REGISTER.

LIKE the old "American Journal of Dental Science," this veteran publication was brought into existence by the action of a society,—the Mississippi Valley Association of Dental Surgeons. At first, it was a small quarterly, and was edited by a committee appointed annually by the society. Soon after it became self-supporting, it was passed into the hands of Prof. James Taylor, who continued to edit and publish it till the close of the ninth

volume, when it was purchased by Taft & Watt, in 1856. Dr. Taft has been continuously connected with it till the present day; he having thus the lead in editorial labor, as far as dentists are concerned, while Dr. Taylor, of all dentists now living, is the pioneer in editorial labor. The *Register* has laid many valuable documents before the profession; and, really has done very much to change dentistry from a handicraft to a profession. Though, after the first few volumes it ceased to be legally the organ of the Mississippi Valley Association, this society having really no more claim on its pages than any other, yet it seems not to have forgotten its maternal ancestry; but has, not only for its own sake, published reports of the discussions, but for the convenience of the members, in the way of ready reference, it has also inserted the official minutes of all its meetings, if our memory does not betray.

Many of the thoughts of Taft's Operative Dentistry appeared in the *Register* previous to the publication of the book; and the same is true of Richardson's Mechanical Dentistry, while all of Watt's Chemical Essays appeared originally in its pages. To name its valuable correspondents would fill pages. To name some, and omit others, might appear partial. Indeed, the dentist who has the full series of the *Dental Register*, is not badly off for a library. It is still edited by Prof. J. Taft, and published by Spencer & Crocker, Cincinnati, Ohio.

THE INDEPENDENT PRACTITIONER.

THIS journal is devoted to medical, surgical, obstetrical, and dental science. It is edited by Harry L. Byrd, A. M., M. D., and Basil M. Wilkerson, D. D. S., M. D.

The *Practitioner* appears to be independent in fact as in name; and few, if any, journals present a finer appearance. With good contributors, industrious editors, and energetic publishers, it ought to, and must succeed. We shall be always glad to see it on our table. Published monthly by the Practitioner Publishing Company, B. M. Wilkerson, proprietor, No. 68 Charles street, Baltimore.

THE MISSOURI DENTAL JOURNAL.

EDITED and published by C. W. Spalding, D. D. S., M. D. Of course the *Journal* makes a neat appearance. Dr. S. is our special friend of the olden time, whose hand we should like to grasp, as we know it would cordially and heartily grasp back. Our associations with the doctor were very intimate, and there was never a note of discordant tone to jar our intercourse. This is a cold, formal, expression, in view of the facts and feelings as they really existed. And our accord is all the more remarkable, when it is remembered that Dr. S. then held to what we regard as the follies of homœopathy, while we were ultra "regular" and orthodox in our medical confessions of faith. With both of us *ultra* in our special views, we taught the same classes for years without a jar. The reader may not believe this. We shall not blame him. We don't believe it ourselves, except when memory performs her perfect work, and reminds us that the secret of it all was that each attended diligently to his own business. While on the shelf, the past few years, it has been our misfortune not to see the *Journal* regularly. This must not continue. We hope to see it, hereafter, as soon as issued; and, also, occasionally to see the open countenance of its manly editor. Till then we must be content with conversation, through the Journals.

THE DENTAL COSMOS.

THIS sterling journal has got a new coat. There we are, again! It speaks, modestly and properly, of "our new dress." If the *Cosmos* had, in the years gone by, shown more of the Miss Nancyish spirit, we should have thought of dress, and not coat. But, if it will be *manly*, we will think of its *coat*. With its new type and superior paper, it is absolutely beautiful. And now, if our good editorial brother can get the matter equal to the display, he will do well. He is proud of his *Cosmos*; and he should be. But the *Cosmos* always was "self-satisfied." Hear it now: "We feel assured that no one need wait for a better medium of

communication with the profession, nor for better company in which to appear." It said all this, of course, before it had heard of the OHIO STATE JOURNAL OF DENTAL SCIENCE.

The *Cosmos* has started on its twenty-third year, and has good reason to be satisfied with its career. Of course, it has made some mistakes; of course, it has corrected some; of course, it will make more; but they will be errors of the head, for the heart has cast anchor. Were it not that "old Time, in his flight," records his movements, we should think of the *Cosmos*, as if about six months old. It looks that age now.

Prof. J. Foster Flagg's articles on "Dental Pathology and Therapeutics" are "to be continued." They were "entered in the office of the Librarian of Congress," in 1873; so it will be seen that they have had a chronic attack of the Toby-continue. But we belong to a church that holds to "the perseverance of the saints," so, in the most orthodox way, we bid him God-speed. If for any cause these articles are suspended, we scarcely recognize the *Cosmos*. They will probably be issued in book-form when the series is completed, and they will make a large and exhaustive volume on the subjects of which they treat. We admire the persistence of Prof. F. What a force, when good health and strong will-power are combined in one person!

JOHNSTON'S DENTAL MISCELLANY.

A monthly Journal of American and Foreign Dental, Surgical, Chemical, and Mechanical Literature.

THIS journal is published by Johnston Brothers, at 1260 Broadway, New York, and, like their instruments and appliances, is gotten up on the No. 1, letter A style—not excluding the excellencies of the rest of the alphabet, however. The *Miscellany* has secured a number of excellent contributors, some of whom we shall coax to divide their time, or to bodily "come over into Macedonia and help us." After such frank avowal, we trust the *Miscellany* will take great pleasure in exchanging with us, for should we succeed to the utmost in our kidnapping process, it will, by that means, get to read the contributions of its old friends. No

journal in the whole list makes a finer appearance. Paper, type, ink, and matter all correspond. We expect the JOURNAL to look a little prettier, but shall not fret if we merely equal it. The *Miscellany* started with January, 1881, on its eighth volume. Its years of experience are an advantage to it. What to omit, as well as what to insert, can be learned, to a good extent, in seven years.

We expect to see the *Miscellany* hold on its way, prospering and rejoicing. It is worthy of such a career, and will very likely work it out.

THE AMERICAN JOURNAL OF DENTAL SCIENCE.

Published by SNOWDEN & COWMAN, Baltimore, Md.

THERE is a sense in which this is the oldest dental journal in the world. Such it is, if it be a continuation of the *American Journal*, established by the American Dental Society, and so long edited by the noted father in dentistry, Dr. Chapin Harris. A boy has his grandfather's knife. The father had new blades put into the handle, and the boy had a new handle adapted to the blades. But the knife never lost its identity. Nor do we lose ours, though not a particle of matter composing the bodies of our childhood is still with or in us. This, then, is the same journal, if not more so; as it is a monthly now, while the old one was quarterly. Its discontinuance for a time, probably leaves to the *Dental Register* the crown of years.

But like ourselves, the *Journal* may be old, by the family record, but it feels and looks young, and is, in all respects, a vigorous, lively old boy; and, hoping that it has renewed its youth, like the eagle at moulting time, we predict for it a long and useful future, a career profitable to its proprietors, to the profession, and to the community at large. It is edited by F. J. S. Gorgas, M. D., D. D. S., and James B. Hodgkin, D. D. S. It is now in its fourteenth volume of its third series.

This journal pursues the even tenor of its way—is solid rather than sensational, and practical rather than deep. It would be difficult to estimate the good it has done in its own quiet way. It has warm personal friends, and probably no enemies. The whole profession may be ranked as its well-wishers, or as neutral. We

shall be always glad to find it on our table, and believe we shall be able to make the new JOURNAL its equal in value, even if we are to be limited to smaller space. Good-willed competition will hurt neither journal.

Question and Answer.

"If you don't see what you want, ask for it."—BILL O'FARE.

DR. GEORGE WATT—

Respected Sir:—For the past few months I have been trying to learn something accurate about alimentation, especially about mineral food. From what source do we get it? Can the animal appropriate mineral pabulum directly from the inorganic mineral? or must the mineral food the animal system assimilates come through the vegetable? Of course the animal must have mineral food; and that minerals, such as chloride of sodium, etc., exist in the system, and are taken from the mineral world, there is no doubt. But is this chloride of sodium the animal takes from the mineral ever vitalized? or does it remain simply mineral in solution?

Must the lime we need to nourish the osseous system come only from or through the vegetable? or can we appropriate lime, iron, etc., directly from the mineral kingdom? Few authors within my reach treat this topic, and none of them thoroughly or definitely. I would greatly prize your views; but to give them would impose too much on your time. So, please do me the favor to refer me to some one of the recent authorities that you regard as accurate and scientific, and I shall be specially grateful for such a favor.

Yours sincerely,

W. H. R.

ANSWER, BY THE EDITOR.

THE questions in this letter are clearly stated, and their scientific and practical importance entitles them to such statement. Would we were able to give answer worthy of them. And, letting the

last come first, we would say that we are not aware of any new issue of books that give this subject special attention. Therefore, we appeal to our correspondents and readers. Brethren, if any one of you knows of such books, let us hear from you, and we shall report at once to Dr. R. Let it be said, also, that this letter was not intended for the press, but it is a type of a great number we have received, and, as neither time nor strength will permit individual answers by private correspondence, we insert this, and reply, as we can, through the *JOURNAL*, allowing this to answer them all. Dr. R. did not know that a new journal was in prospect when he wrote the letter, but we feel assured he will approve the course taken.

Farmers, experienced in stock-raising on the seacoast as well as inland, tell us that the vegetation along the coast seems to supply the animals with soda to such an extent that often but little attention in the way of "salting" stock is called for. In the interior they find that a more abundant supply of common salt, chloride of sodium, must be furnished to satisfy the wants of the animals. And they salt their cattle, leaving them to settle the question as to their ability to assimilate. Common observation testifies that the chloride of sodium, thus furnished directly, fulfills all the requirements of the system as well as if taken by eating the coast vegetation. Soda for the bile, or for any secretion requiring it, seems to be as readily obtained by the one process as by the other. And we have found that those who maintain the exclusively vegetable theory of mineral nutrition, salt their horses and cows as faithfully as others. We have never heard anything except fine theory brought to bear against the directness of the assimilation of minerals. With Liebig, we claim that chloride of sodium is sodium chloride, whether found in the ocean, the grass, or the blood and secretions of the animal.

As to the assimilation of lime, we appointed a committee of hens on the subject, and, as we literally digested their report, we shall endeavor to give the reader the advantage of it: A lot of fine hens were kept in a small lot. Though they appeared healthy and gave a liberal supply, their eggs had shells so thin that it was almost impossible to handle them without breaking. All of the eggs had thin shells. Without change of run, we added a liberal supply of marble dust to their feed, which was otherwise un-

changed. Improvement was rapid, and in two weeks all the shells were normal. On a smaller scale, this experiment has been frequently repeated, with similar results, demonstrating, we think, that hens can assimilate carbonate of lime directly from the mineral kingdom. Ours was an unprejudiced committee, and we regard the report as entitled to the highest respect.

Over thirty years ago, Mrs. M. was the mother of two children, whose temporary teeth decayed almost as rapidly as they grew. She had very bad teeth, necessitating a full upper denture before she was thirty. When called to attend her, she was three months advanced in her third pregnancy. We furnished her a supply of, and advised her to use, phosphate of lime (bone phosphate) freely, till the close of lactation. She complied with hopeful energy—used it on her bread and butter, used it daily, and many times a day. At first she was pale and emaciated, but soon she became robust and rosy. She had a short, natural labor, and her babe, weighing twelve and one-half pounds at birth, (the mother weighing only one hundred,) went all right through first dentition; no decays, and the permanent teeth were indeed, excellent, and continued so till the age of twenty-five, since which we have lost knowledge of the case. Two children were born to her afterward. The phosphate was not used so long, nor in such quantities. Their teeth were much better than those of the first two, but decidedly worse than those of the third. We have always believed the phosphate was, in this case, assimilated: but, of course we prefer to gain it from the food proper, but, if this source fail, we try to supplement. Prof. J. Taft was quite familiar with the case of Mrs. M., and will recall it when we state that her husband lost his right hand by accident.

As to iron: Those advocating the doctrine, that inorganic matter can not be assimilated, prescribe it, as far as we can see, as frequently and as confidently as do others. And they discuss, under these circumstances, not the question of its assimilability, but which of all, its officinal preparations is the most easily assimilated. And many, if not a majority of them, decide in favor of the pure metal, uncombined with any element or compound. They feed the pale, anæmic girl on pure iron, and in a few weeks the rosiness of her tell-tale cheeks, and the pouting of a pair of cherry lips, tell us “yes, iron can be assimilated;” and the silent testi-

mony of her life is worth more than the *opinions* of all the self-elected savans of the profession.

It is not probable that any one will claim that the red corpuscle is duly and properly organized without its normal quantity of iron. If this iron is obtained from the beef we eat, or from any article of food, it is well for the red corpuscle; if obtained from precipitated or dialized iron, it is just as well. If the corpuscle is organized in the one case, it is in the other; and, hence, if iron is assimilated in the one case, it is assimilated in the other; the one corpuscle being the exact equal of the other in composition, appearance, structure, and function. The iron is given, not to increase the quantity of it in the red corpuscles already present, but to furnish an essential ingredient for making new corpuscles—to furnish this ingredient in greater quantity than is obtained by the system from other sources, thus lightening the labor of the vital forces; for quantity of matter modifies affinity in vital, as well as in inorganic chemistry. Is the red corpuscle alive? Yea, verily! for “the blood is the life thereof;” and if so, then has the mineral, iron, become organized animal matter.

Editor Ohio Journal—

How is spunk prepared for dental purposes? Please reply in Question and Answer department of the JOURNAL, and oblige,

Yours,

F. F. W.

SPUNK is called “touchwood,” tinder, agaric, boletus igniarius, etc. It is obtained from mushrooms, of the genus called Boletus; and the varieties of spunk vary with the various species of this genus. Other circumstances also cause great variations in the properties of the same species.

The agaric from the oak is mainly used by dentists and physicians. It mostly grows directly in contact with the bark, and is at first soft, but becomes hard and woody with age. We have often, however, found it in the cavities within the trunk of the tree. Before the days of lucifer matches, we used to obtain it abundantly from the gray ash, by cutting open enlargements found on the trunk, or larger limbs of the trees. If obtained in bulk, as is usual, it is cut into layers of the desired thickness,

before it is softened. It is usually softened by beating with wooden mallets, and rubbing with the hands. And, with a good article, this is all the preparation necessary for dental use.

We have seen it, however, of so fine a texture that no preparation or treatment was necessary. It is thus found, sometimes, in the cracks of decaying timber; and we have obtained it from this source, so fine and pure, that only drying was necessary to make it the very best of tinder. In early boyhood we have often ignited this variety by condensed air, to the surprise of our superstitious playmates. Of course, when spunk is not pure, foreign matter is to be removed; but it is always best to get only a pure article, and cut, and soften it as above described.

Compilations.

"I gather them in! I gather them in!"—OLD SEXTON.

APPARENT DEATH AS A RESULT OF ASPHYXIA.

Medical journals, says the *Medical Press and Circular*, occasionally inform us of wonderful resuscitations brought about by the persistent use of artificial respiration; but two, lately reported to the Academy of Science, Paris, by Dr. Fort, Professor of Anatomy in the Ecole Pratique, are especially noteworthy, and teach us to persevere in any efforts we may make to bring back signs of life. In the case of a child three years old, who had already been placed in his shroud, Dr. Fort commenced the use of artificial respiration three and a half hours after apparent death. After four and a half hours of steady work the child was brought back to life. The other case was that of a drowned man, who had been under water for twelve minutes before the body was recovered. Artificial respiration was commenced an hour afterward, and after being kept up for hours the man was restored to life. The report of the meeting of the Academy does not give the details of the child's case before the appearance of the apparent death, nor what

prompted the doctor to commence the artificial respiration.—
Med. and Surg. Reporter.

SWALLOWING FALSE TEETH.

ENGLISH papers report an odd case from Carlisle. A doctor was called one evening at 7 o'clock to visit a lady of about fifty-five, who, as she described it, had been feeling poorly all day, but could give no definite symptoms, and complained of no pain. During the examination he noticed a change in her speech. This led to an investigation of her throat. Outwardly the neck appeared normal, and nothing could be felt to indicate an obstruction; he then examined the pharynx, but no foreign body could be seen there, and the examination only brought on vomiting and straining. However, he determined to look a second time, and judge of his surprise to find embedded low back in the pharynx a set of false teeth, which he extracted with little trouble. Upon inquiry, the woman said she had missed her teeth about 9 o'clock in the morning, but had no idea that she had swallowed them. It is remarkable that they had been in the pharynx without causing her pain for ten hours.

TRAGEDY IN A DENTAL OFFICE.

On July 26th, at about 5 o'clock, a terrible tragedy occurred in Oakland, California, the persons concerned being E. F. Schroeder, exchange teller in the London and San Francisco Bank, and Dr. Alfred Lefevre, a prominent dentist of Oakland. The latter was shot and killed by Schroeder, who visited him in his office, and fired two shots, one of which entered Dr. Lefevre's left side, ranging downward through the intestines and lodging in the opposite hip. The second shot missed, but the right side of the head and ear were powder-burned.

A San Francisco daily states that Mr. Schroeder has refused to make any statement regarding the affair, and the following particulars have been gathered from persons not directly interested:

According to the reports, it appears that Mrs. Schroeder, who is a daughter of Rev. Horatio Stebbins, of San Francisco, went down to the train on the day of the shooting, to meet her husband on his arrival from San Francisco. She was accompanied by her little daughter, some three years of age. Upon meeting her husband, Mrs. Schroeder is represented to have told him that on the Saturday previous, while under the influence of chloroform in Dr. Lefevre's office, a felonious assault had been made upon her by the dentist in question.

After hearing the story, Schroeder went with his wife and child to Dr. Lefevre's office, corner of Eighth street and Broadway, and, mounting the stairs, entered the Doctor's office. Advancing within a few feet of Lefevre, he pulled a pistol and fired two shots. One report states that Schroeder said, "Dr. Lefevre, this is my wife; take this," (firing) "and take that" (firing again). The shooting took place at 4:50 o'clock, and Schroeder was almost immediately arrested. On the way to the City Prison, Schroeder said: "I hope to God I have killed him; if I haven't I will. A man cannot seduce my wife and live."

Dr. Lefevre, upon being shot, fell upon the threshold of the door leading from the operating room to the private working room. He was raised and placed upon a sofa and was soon surrounded by physicians who had been summoned. The wound was fatal. Dr. Lefevre survived about forty minutes.

There are many people who believe that Mrs. Schroeder's charge against the deceased was purely illusory. It is well known that such hallucinations are not uncommon after the administering of chloroform. Some remarkable cases exist where hallucinations of this nature have taken the form of absolute conviction in the minds of the persons laboring under them, although there exists abundant evidence to prove that this conviction was utterly unfounded.

Dr. Lefevre was quite well known in Western New York, having been a student in the office of the late Dr. J. G. Barbor, of Le Roy, and went to California in 1862. We are informed that he was a native of Canada.

The coroner's jury rendered a verdict charging Schroeder with the murder of Dr. Lefevre.—*Dent. Ad.*

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. I.

APRIL 15, 1881.

No. 2.

Contributions.

“Withholding facts is robbery.”—ORVILLE DEWEY.

NEURALGIA—ITS PATHOLOGY AND ETIOLOGY.

BY S. S. WILSON, M. D., XENIA, OHIO.

TRUE neuralgias do not claim a place among the most frequent diseases of the human system, yet they are sufficiently common to be certain to occur with more or less frequency in the practice of every doctor, whether he be an M. D. or a D. D. S., and their importance is not to be measured by the frequency with which they occur, but rather by the extreme suffering which they inflict, and by the too often successful rebellion which they wage against our efforts to conquer them, or even mitigate the agony which they occasion. The pain which they inflict, and their rebelliousness to treatment, place them among the sources of greatest anxiety to the practitioner. No class of diseases is better calculated to teach the physician (and the dentist as well) the importance of his most strenuous efforts; none is more likely to

occasion mortification on account of repeated failure, and none more likely to occasion the loss of professional credit.

This condition of things is largely due to the extreme timidity and vagueness with which our leading authors are in the habit of speaking of the pathology and etiology of this disease. It must be admitted that the pathology of neuralgia is not as clearly defined as is that of some other diseases, yet, when taken in connection with its etiology, we can obtain sufficient light upon the nature of the disease to serve almost all practical purposes.

In this paper I shall endeavor to establish the following points, viz.: (a) That in the vast majority of cases, neuralgic pains are due to nerve-lesions of central origin. (b) That the essential seat of this lesion is the posterior root of the spinal nerve in which the pain is felt; and (c) that the essential condition of that nerve root is atrophy. One of the strongest arguments which we possess, in confirmation of the first of these points, is the undoubted hereditary nature of neuralgia. This character of the disease is a matter of great importance, a fact that the practitioner must readily admit, if he will only follow out the course of questioning and reasoning which it indicates. The minor position among diseases which is given to neuralgia, by the common people, is the source of much difficulty in obtaining a reliable family history on this point, farther back than one or two generations; but instances in which it can be traced for three, and even four generations, are of sufficient frequency to enable us to draw positive conclusions. In pursuing our examination we should not content ourselves with the history of those who have been actually neuralgic, but we should look farther and take in all those other serious neuroses, such as insanity, epilepsy, hypochondria, paralysis, chorea, etc., to all of which neuralgia is more or less nearly allied. Much difficulty is always encountered in conducting such an examination, but if it is faithfully carried out, it must convince any candid mind that neuralgia is notably a hereditary disease. The following striking example has fallen under the notice of the writer: Three generations of a family are now living, and from the oldest of these we have received what we have good reason to believe is a faithful history of the generation last deceased, which was of a marked neuralgic tendency. The grandfather, the oldest of the family now living, until sixty years of age, suffered from frequent

and violent attacks of trigeminal neuralgia, and has always been nervous and extremely irritable. A brother of his also suffered with neuralgia, affecting the fifth nerve, and had one child imperfectly developed, both in body and in mind. This child, at death, was a lunatic, about four feet in height, with small body, but with enormously developed head. In another branch of the family, three sons are insane, one has always been melancholy, and one was born blind. Of the second generation, which compose a family of nine children, not a single one has escaped the neuralgic tendency, the fifth nerve being the usual seat of the difficulty. One of the number is decidedly hysterical, and another suffers frequently from spasmodic asthma. Of the grand-children, now numbering near twenty, four have been troubled with spasmodic croup; one became a stutterer at five years of age, and is still so at twelve years of age; and five suffer from trigeminal neuralgia. What nervous troubles may be developed hereafter, in the rising generation, cannot now be ascertained; but if the past is any indication of the future, the lives of these individuals will be loaded with much of evil of a neurotic inheritance. If more extended proof of the hereditary nature of neuralgia is desired, I would refer any who may be skeptical on this point to the history of neuralgic cases in their own practice; to the record of twenty-two cases given by Austin, derived from his private practice; and also to an analysis, by the same author, of eighty-three cases, hospital and private patients, whose blood relations had suffered from various of the neuroses. In addition, we frequently see two or more of the neuroses alternating with each other, or the one following the other as the result or climax; as when neuralgia follows mental agitation, or where insanity follows neuralgia, or, as in Dr. Mandsley's patient, neuralgia and insanity alternating with each other, the one vanishing during the prevalence of the other. In such cases the lesion is evidently central, and the alternation is due merely to the transition of the affection from one center to another.

The pains of locomotor ataxy deserve a prominent place in the treatment of this subject. In this disease we have an example of the heredity of nervous troubles. Not only do we find a tendency to it transmitted from generation to generation, but we will find it existing in two or more members of the same family. So

marked is this disposition, that when we meet with those shifting, lancinating pains so characteristic of this disease, it becomes us to make diligent inquiry as to the existence of the disease among the ancestors of our patient. In this disease also, there is no doubt as to the actual seat of the lesion, nor as to the character of the lesion, the posterior columns of the cord, together with the posterior nerve roots, being the parts chiefly affected, and the condition of these parts being that of atrophy.

Important testimony bearing upon this subject is to be derived from the history of cases of spinal paralysis. I have in mind two cases of paraplegia, in which the most violent neuralgic pains occurred in the nerve trunks given off from the cord below the point of injury. In these cases the position and nature of the lesion could hardly be mistaken.

Chronic alcoholism, by the production of arterial and capillary degeneration, cuts off to a certain extent the nutrition supply to the cord and nerve roots, and thus gives rise to pains very much resembling those of neuralgia.

The development of the genito-urinary apparatus probably has more to do with the causation of neuralgia than most physicians suppose. It is a very noticeable fact that nearly all cases of epilepsy, migraine and clonus make their appearance during the period of sexual development. During this period, special demands are being made upon the system to complete the development of these special organs; and, unfortunately, this is a time of life when ambitious children, and the mistaken ideas of ambitious parents, and the superlative foolishness of teachers and boards of education, demand that the mental powers of the child shall be taxed to the utmost. Under such circumstances it is but natural to suppose, what is really the case, that portions of the nervous system not directly concerned in the development of either the mental or sexual organs must suffer from a lack of nutrition. The medulla oblongata is the part of the nervous system which must specially suffer at this time, and as a result of this, we have disorderly nervous action, producing explosive manifestations (epilepsy) in the motor apparatus, and pain (neuralgia) in the sensory.

In closing this paper we will make a hasty notice of some of the external influences which take part in the causation of neuralgia, and while speaking of them as external causes, we are con-

vinced that in the majority of cases they are only exciting causes, their action being effective usually only in cases where the centers of the nerves exposed to their influence already possess a neuralgic disposition.

In the continued application of extreme cold, or of cold and moisture to the naked skin, we have a cause of neuralgia which is frequently effective; but while we say that it is frequently effective, we must add, that neuralgia is by no means a common sequence of such exposure: for when we consider the vast number of persons who are thus almost constantly exposed, we must at once conclude that if this were a very powerful factor in the production of neuralgia, we should, during the winter months, be over-run with such patients. The same thing is true of injuries to nerve trunks, and in these two examples of peripheral causes of neuralgia, we have an argument in favor of our first proposition, that the essential seat of the lesion in neuralgia is central; and the nerve root is lowered in vitality. Nature has performed experiments in abundance for the proof of this. The greatest amount of pain is felt not at the time of the application of the cold, nor at the time of the receipt of the injury, but during the period when the nerve is returning to its normal condition, the period when the nerve-center is being exhausted of its reserve of nerve force, in re-establishing full functional activity in the parts in which this has been abolished by the action of cold or violence. The pressure of tumors, and especially of aneurismal tumors, upon the posterior roots of nerves or upon their ganglia, gives rise to severe neuralgic pains, and post-mortem examinations of these cases reveal the fact that the parts subject to pressure are in a state of atrophy, more or less advanced, according to the amount of pressure, and it teaches this important fact in this connection, viz.: that the most acute neuralgic pain may be felt in the peripheral termination of a nerve, the central end of which is almost completely destroyed.

Other sources of peripheral causes are found in errors in the performance of the functions of the digestive, and of the genito-urinary organs; in errors in the nutrition of the teeth, and in the performance of the functions of the eye; but on these, time and space will not allow us to dwell, and, content with their mention, we close our paper, with the hope that it may be of as much benefit to some reader as its preparation has been to the writer.

ANÆSTHESIA—NITROUS OXIDE.

BY THE EDITOR.

IN the consideration of the various agents used in the production of anæsthesia, many reasons might be given for placing this one first in the list. The first decided, practical success in anæsthesia was obtained by the use of this agent. It is used oftener than all the others.

In view of his many and interesting experiments with nitrous oxide, we are surprised that Sir Humphrey Davy did not develop the subject of anæsthesia, in all its practical utility, just as we are surprised that James Watt did not invent the railroad as soon as he had completed the steam engine. Davy's failure to complete the discovery is doubtless due to the very small quantity of gas used in his experiments, and to the fact that the breath was re-inhaled with the gas. Partial suffocation of the patient was a necessary accompaniment of such experiments. A remark of Regnault in this direction, throws some light on the inefficiency of early experiments with this agent. He is of much later date than Davy, and he cautions experimenters against the suffocating methods of early chemists. He says a sack to contain the gas for inhaling should be large, and not smaller than the bladder of an ox. And into this he expected the breath to be exhaled and re-inhaled, again and again, and yet such botch-work was called experiments with nitrous oxide; and, in the revival of nitrous oxide, after the long disuse of it, following the death of Wells, Mr. Colton, and the dental profession as well, showed but little, if any, more common sense. Rubber bags had become common, and hence bladders were not re-introduced. But think of small gas-bags, of three or four gallons each, laid on the laps of refined, delicate ladies, tubes inserted into their mouths, their lips compressed against them, their nostrils closed by screw-clamps and the poor victims left to die at once of apnœa, or re-inhale, over and over again, the filthiest and deadliest of all their own excrements, to say nothing of those already in the bags, left by the rotten, syphilitic pimps and prostitutes who had preceded them as victims. Rabshakeh's proposition to Hezekiah's Hebrew soldiers was a polite and cleanly suggestion in comparison. Is the picture overdrawn? Let words bear witness: At the meeting of the

Mississippi Valley Association for 1864, one member, a leading man in the profession then and now, said, "a four-gallon gas bag would be usually found sufficient for three inhalations." He was understood that such a bag, full of gas, would prove sufficient for three operations on as many patients. And further, he said, "he had administered the gas to three different patients, from the same bag, without renewing." The writer of this objected to such course at the time, but the statement did not seem to make a sensation. Another member remarked, "by using the gas-bag too often, without replenishing, he had seen suffocation result before anæsthesia." And, not far from the same date, Mr. Colton expressed the opinion that re-inhaling from a gas-bag was preferable to the use of a valved inhaler, as the carbonic acid of the breath appeared to be necessary to complete anæsthesia. All the older members of our profession will remember that this filthy method was in common use. The writer of this cannot yet think of the inside of a bag so used, without suffering from nausea.

COMPOSITION OF NITROUS OXIDE.

This gas is the protoxide of nitrogen, that is, it is composed of fourteen parts, by weight, of nitrogen, united with eight parts of oxygen. Its symbol is, therefore, NO, by the old notation. That it is a combination of its elements, and not a mere mixture, is evident from the fact that it is possessed of taste and smell, while its components are both tasteless and inodorous.

THE OXIDES OF NITROGEN.

Nitrogen is liable to various degrees of oxidation, and each degree results in a compound radically differing from all the others. There is *nitrous oxide*, already described; *nitric oxide*, composed of sixteen parts of oxygen, combined with fourteen of nitrogen; *hyponitrous acid*, in which twenty-four parts of oxygen unite with fourteen of nitrogen; *nitrous acid*, thirty-two of oxygen with the fourteen of nitrogen; *nitric acid*, composed of forty parts of oxygen combined with fourteen of nitrogen. The latter is supposed to be the highest degree of oxidation of nitrogen, or, it may be said, the combustion of nitrogen is complete. These compounds differ in their characteristics to a remarkable degree.

All but the first are very energetic chemical reagents. Much of this energy in the second, third and fourth is due to their inordinate demand for additional quantities of oxygen. The chemical energy of the fifth is due in part to its great affinity for basic oxides, water included, and, in part to the readiness with which it parts with portions of its oxygen, to form these bases, that the residue as above described, may combine with them. The salts thus formed are called *nitrates*. The special activities of these compounds are here explained because both physicians and dentists have argued that the first-named, (nitrous oxide) must be dangerous because allied to the other oxides of nitrogen, which possess dangerous properties. But no argument could be more fallacious.

Nitrous oxide, unlike its comrades, is not demanding more oxygen, but, on the contrary, it is ever ready to give up, on the slightest pretexts, that which it already has. The affinity holding its component elements together, is so feeble that a spark is re-kindled into flame as readily in nitrous oxide as in free oxygen. And after the re-kindling the combustion is all the more energetic in the former, because the oxygen is nascent, that is, it is oxygen as ozone. That a spark may be re-kindled into flame in nitrous oxide, the gas must be decomposed, for, as nitrous oxide, it is a non-supporter of combustion. And the readiness of decomposition is so marked that no one can see that a spark is not as promptly re-kindled by it as by free oxygen. And it is this readiness of decomposition that enables it to support respiration for a time, as it readily does. The continued breathing of it irritates the air passages, because the oxygen is active, being nascent instead of passive, as is most of that in the atmosphere.

It is very unfortunate that when a man greatly excels his fellows in some branches of knowledge, he often forgets that he does not excel in all; and a consequence of this misfortune is, that he often speaks with as much assurance on subjects of which he knows nothing, as he does on those which he has fully mastered. The masses of the profession recognize the superiority of such a man, on some subjects about which they know a little, and, of course, with his positive assertions, they take him on trust, on subjects about which both he and they know nothing. This trait of the human mind enables a man of positive character and strong self-assertion to do great mischief. The writer of this has had to listen to such, who he knew had spent fewer minutes than

he had months in the study of the subject, stating to others who had given the matter as little attention as themselves, that nitrous oxide is not a better supporter of respiration than carbonic acid; that a human being would live as long under water as in an atmosphere of nitrous oxide, etc., when he could readily recall the time he had breathed it for an hour, at noon, and had done a full half-day's work in the afternoon, without discomfort then or afterward. At the same time he could recall the day that an English terrier had breathed the gas from 11 A. M. to 12 M., without any admixture of air, and remained so true to nature and function, that he killed over seventy rats between 1 P. M. and 2 P. M. of the same day.

But while such facts pertain to nitrous oxide, a single breath of nitric oxide, if it were possible to take it, would prove instantly fatal; and the difference lies in the facts that one gives out oxygen almost as readily as if free, yet quite too active for normal respiration, while the other takes oxygen direct from the red corpuscles, or any other tissue that contains it, and is, thereby, converted into a caustic acid, capable of destroying any texture of the body, and this acid is presented in all the ferocious energy of its nascent state. The presence of minute traces of nitric oxide in the nitrous oxide constitutes the chief danger in the use of gas in dental surgery. On the other hand, there are silly advocates of nitrous oxide who maintain that, as it is composed of the same constituents as atmospheric air, and is richer in oxygen, it is, therefore, a better supporter of respiration than the atmosphere. But our Father in Heaven makes no mistakes, and he has not given us an atmosphere of the oxide. And it is a mere assumption, and not true, that it is composed of the same ingredients that constitute atmospheric air, for carbonic acid is an essential constituent of our atmosphere.

The fact that nitrous oxide is a medicine and not a plaything should never be forgotten, and, consequently, it should be used by only those who are well versed in the knowledge of the human constitution and in the science of chemistry. The habit of taking or administering nitrous oxide to see what disposition will be manifested under its influence, for the gratification of the curious, is not more legitimate nor sensible than it would be, under similar circumstances, to give doses of ipecacuanha, to see which of the victims would be the first to vomit. The most serious drawback

in the way of the proper introduction of nitrous oxide into surgery, is the fact that for more than half a century it has been used as a plaything, or means of amusement, by the ignorant and unscrupulous.

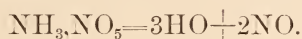
PREPARATION OF.

Nitrous oxide is usually obtained by decomposing nitrate of ammonia by the aid of heat. In solution this salt is colorless, when solid it is white. It is composed of one equivalent of nitric acid and one of ammonia. Ammonia is one of the alkalies, and is composed of fourteen parts of nitrogen combined with three of hydrogen. Its symbol (old style) is NH_3 , while that of the acid is NO_5 . This takes no account of the water of crystallization, as its consideration would not aid us in understanding the reactions which occur. Each of the three elements composing this salt is a gas, when free. Their natural elasticity is overcome while they are held in combination to form the salt. Heat, therefore, decomposes the salt, by increasing their elasticity. When they are thus separated, other affinities assert themselves, and that between oxygen and hydrogen, being the strongest known in chemistry, is the key to the decomposition. When the two leaders have taken each other, it is easy to see what must become of the other elements. When the decomposition is effected as desired, the sole results are nitrous oxide and water; but it is doubtful if this is absolutely obtainable in practice, at least by present methods.

The salt is placed in a glass retort, or, what is better, a Florence flask, with a perforated rubber stopper, with glass tube attached. The heat is applied to the flask by means of a smokeless flame, a properly adjusted gas stove being preferable when practicable. The gas should be passed through three or four wash bottles or jars containing water. It is claimed by some that the addition of sulphate of iron to the first wash-bottle, and caustic potash or soda to one of the others, gives better results in the way of pure gas. The water should be renewed in the first bottle, each time, before using again. This bottle must not be full, as the water of crystallization, and that formed by chemical combination, during the process, are condensed in it. It is not necessary to give here a minute description of the details in making the gas, as those who expect to make their own should

receive practical instruction from experienced chemists, before attempting the process in practice. Many, and perhaps a majority, of those using the gas, buy it ready for use, condensed to a liquid form in strong cylinders. This puts them on a par, as to nitrous oxide, with surgeons in the use of ether and chloroform. They sink their own chemical responsibility in that of the manufacturer. And this is well in the present state of chemical knowledge in our profession. Thus far, however, we have preferred to prepare our own, and shall probably continue so to do.

It has been stated already, that when nitrate of ammonia is decomposed as desired, the sole results are water and nitrous oxide. This decomposition may be illustrated by an equation, thus :



This equation represents one equivalent of nitrous oxide decomposed into three equivalents of water, and two of nitrous oxide. For the benefit of the non-chemical reader, it may be well to explain the equation. N, H and O, respectively represent nitrogen, hydrogen, and oxygen. The letters are called symbols. The small figure to the right affects only the symbol next to it. The large figure, on the left, affects all the symbols between it and the next break in the line. When no figure stands at the side of a symbol, figure 1 is understood. Now look at the equation: NH_3 shows that nitrogen and hydrogen are present; standing together shows they are combined; no figure beside N shows that one equivalent is represented. The small figure 3 beside H shows that three equivalents of hydrogen are in the combination; but such a combination constitutes ammonia. In like manner the one equivalent of nitrogen and five of oxygen constitute nitric acid; and these two compound symbols, being separated by only a comma, give expression to the idea that they have combined. But when nitric *acid* combines with the *alkali*, ammonia, we have nitrate of ammonia. The right side of the equation is simpler: Figure 3 affects both H and O. But three equivalents of hydrogen combined with three of oxygen, give three of water. Nitrous oxide is composed of one equivalent each of nitrogen and oxygen, and the large figure 2 shows that we have two equivalents of this, the desired gas. Now, if the reader, who is not versed in chemical notation, will carefully study this explanation of this equation, he will be able to read and understand almost any chemical equation.

If the decomposition of nitrate of ammonia represented by the equation above were obtainable at will, with absolute mathematical accuracy, then would nitrous oxide be recognized as a blessing beyond estimation, both as an anæsthetic and as a therapeutic agent. No darkening of the complexion could occur during its administration, unless the operator should deliberately suffocate his patient, or victim, rather. But a doubt in this direction has been already expressed. With the decomposing heat too low, a little, and with it too high, an abundance of a deadly gas passes over with the nitrous oxide. In any decomposition which may occur, nitrous oxide is chiefly given off; but a very limited quantity of the poisonous gas referred to is capable of producing disastrous results. The deadly gas referred to is nitric oxide, which is just twice as rich in oxygen as is the nitrous. Its symbol is NO_2 , and, when it is given off the order of decomposition is probably represented by the following equation:



Should the decomposition of the salt occur, as represented by this equation, it must be borne in mind that a much more abundant decomposition in accordance with the preceding equation takes place at the same time. An experienced eye can often detect the latter decomposition by the peculiar appearance of the surface of the melted nitrate of ammonia in the flask or retort. This appearance is due to an infinitesimal series of minute explosions caused by the coming together of free hydrogen and nitrous oxide. How and why the nitric oxide is so deadly in its effects on the constitution must be left to another paper. Suffice it to say that with security that it shall not be present, the use of nitrous oxide in dental surgery is almost robbed of its dangers,—indeed entirely so, if the operator is intelligent.

It is not so easy to get rid of nitric oxide, as many imagine, when it has become commingled with nitrous oxide. The poisonous gas is invisible, colorless, tasteless, about as heavy as atmospheric air. Some have claimed that, as it is about a third lighter than nitrous oxide, it will rise above the latter and may be drawn off; but such have only shown their ignorance of the laws of gaseous diffusion. Many have claimed that it can be washed out by passing through, or preserving over water, the mixture of gases. They would scarcely try to wash sand out of pulverized sugar in

the same way, yet the two processes are similar; that is, the nitrous is far more soluble in water than nitric oxide. Water dissolves about its own volume of the former, and only eleven per cent. of the latter. It would be easy, therefore, to wash nitrous out of nitric oxide, while to reverse the process would be found utterly impracticable. Atmospheric air changes nitric oxide to nitrous acid, which can be easily washed out with water; but as we do not know how much nitric oxide is present where we wished and intended to have none, so we do not know how much air to admit in any given case. If we admit too much, our gas is diluted; if too little, the poisonous gas is still present to a greater or less extent. The proper way, if practicable, is to not make nitric oxide.

ADDRESS TO THE GRADUATES OF THE OHIO COLLEGE OF DENTAL SURGERY, MARCH 3, 1881.

BY GEO. W. KEELY, D. D. S., PRESIDENT OF THE TRUSTEES.

Young Gentlemen:—You have arrived at one of the most important and interesting periods of your lives. You have met the requirements of this institution, and have fairly won your degree of Doctor of Dental Surgery. You go out from these halls, and will hereafter, I trust, look back to this institution with pleasure and pride, as your *alma mater*. It becomes my duty, as President of the Board of Trustees, to give you some words of advice before parting.

You are not to conclude that you have learned *all* that you can in Dental Science, and that you have only to open an office, and at once meet with unlimited success in the practice of your chosen profession. Gentlemen, the solemn truth is, you have but a mere smattering knowledge of Dental Science, and you will realize this fact in the not far distant future. Your instructors have faithfully directed you in the first principles, the rudiments of the science, and have laid the foundation deep and broad for success. Your future depends upon yourselves. If you are studious and industrious in pursuing the studies pertaining to your profession and medical science, as well as general literature, success

surely awaits you. It has been truthfully said, "He who aims at excellence will arrive above mediocrity; but he who aims at mediocrity only, will be sure to fall short of it." Aim high, gentlemen! Let it be your ambition to *excel*—to stand at the head of your profession. To do this, you must be thoroughly qualified, enthusiastic and honest in your manipulations, never allowing a case to pass from your control, until you have done the very best you can for your patient under the surrounding circumstances. In almost every instance (for a time, at least) you will feel, if the case was to be gone over again, you could make it more perfect.

It may be considered commonplace, and quite unnecessary, by some, to advise you in regard to your office, and your deportment there, and in your intercourse with patients; but life is made up of little things, so considered by many, and the fact is, everything connected with our lives is important to a greater or less extent. Secure a convenient office and furnish it as well as your circumstances will admit; decorate the walls with a mirror and a few choice pictures, vases of flowers, running vines, or anything to make it attractive, not only for yourselves, but for your patients also. Then see that it is kept scrupulously clean and pleasant, after getting everything in good working order. Much of your success will depend upon your personal appearance and cleanliness. You should never allow yourselves to operate for a patient, or pass from one to another, with unwashed hands. Put yourselves in their places, and you will readily see the importance of attending to this matter. Look to your habits, and indulge in nothing that would be offensive to the most fastidious patient. As a rule you should ignore tobacco, in all its forms, as well as all intoxicants. In this way, you can approach your patients with clean hands, a sweet breath and a pure person.

Intemperance is the giant curse of our Nation; thousands are falling victims to the fell destroyer, and other thousands are proving in their experience the truth of the inspired word, "It biteth like a serpent and stingeth like an adder."

I would advise you, therefore, to take the only safe course, by totally abstaining from these vices, which drag one down often unconsciously. In a word, be gentlemen. It costs no more and requires no greater effort to be gentlemen than it does to be boors. You will, of course, meet with competition and be brought into contact with men of the same profession. Indulging in jealousies

toward each other, and stooping to the low and disreputable practice of slander and detraction would bring reproach to the learned profession, to which you have sworn allegiance by receiving your diplomas. The practice of underbidding, and enticing away another's patients, for the sake of an increase of patronage, can not be too strongly condemned. Let it be your purpose to cultivate good will to all and show by your conduct "how good and how pleasant it is for brethren to dwell together in unity."

Gentlemen, I cannot forego the importance of saying a word in regard to the future dental student. You know enough of dental practice to know that an office-boy is almost one of the indispensables in a well-regulated dental office. In times past, many such boys, after getting instructions for a few months, have been sent out to prey upon a too-credulous and confiding public. The elevation of our profession depends greatly on the future dental student. As we extend the hand of fellowship to you to-night, and heartily welcome you as worthy members of our profession, sincerely hoping and believing you will ever be found with the workers for the general good and honor of the profession, I implore you that it may never be said that any of you received a student into your office, unless he was worthy and well qualified, mentally and morally, to enter a profession which requires so much Christian patience, sympathy, persistent, energetic work, and honest desire to do the very best for every patient, always bearing in mind the Golden Rule. Lastly, but not the least by any means, require him to do as you have done, take a course in a reputable Dental College.

I cannot too strongly urge you to take an active interest in Dental Associations. No live, progressive dentist can afford to ignore them. In such societies questions of vital interest are discussed. You meet old friends, make new ones, interchange ideas, enlarge your views and become more generous and liberal. If you settle in our beloved country, do not let an opportunity pass to identify yourself with your State society, induce others to go with you, and make your influence felt for good. Do not imagine you can't spare the time, because you could fill it with appointments. If all who attend them made such excuses, we would have none. They are a great, prolific source of dental education, and in justice to yourselves, your patients and the profession you represent, you should take an active interest in associated action.

One thing more: Our journals need your liberal patronage, and you need their careful perusal. You know the character of them, and your leisure time can not be better employed than by reading them, and it will also serve as recreation. Make a good selection of books to fill your library, and enrich your minds, not forgetting it would be incomplete without the Book of Books. By way of eminence, the Bible is called the "Book of the Lord." It may emphatically be called the Book of Knowledge. Then, if this be its true character, (as one says,) "All the streams of sacred knowledge which have been flowing in every direction, through all the christian world, fertilizing the waste and desolate places, have arisen from this knowledge. Do you, therefore, pant for knowledge? Here it spreads its ample page, and all may gain that knowledge which will make them 'wise unto salvation.'" It has been said, "A christian with a Bible in his hand resembles a man standing on the elevated summit of a mountain, where ether pure surrounds him and Elysian prospects rise. The dark clouds that hang over the past are all dissipated, and he views the birth of time, formation of the globe, creation of man, the origin of evil, and the long train of miracles, prophecies, and wonders with which the Old Testament abounds." If this is the "Book of the Lord," then we must admit that the God of the Bible has claims upon us. Men generally would be better, wiser, and happier, by more constantly reading it, and conforming their lives to its precepts. Let it be the man of your counsel, treasure its truths in your memories, and practice them in your lives.

GRADUATES:—It now becomes my pleasurable duty to present you with these diplomas, which confer on you the degree of DOCTOR OF DENTAL SURGERY.

In conferring these marks of distinction and merit, the Faculty and Trustees hope that you may be always found at the front—battling for the right. Amen.

THE TEETH DETERIORATED BY DISEASE.

BY A PHYSICIAN.

WHEN a patient has recovered from any prolonged and very exhaustive disease, such as typhoid fever, he usually devotes a goodly proportion of his time to telling how fearfully the strong

medicines have affected his teeth. He often finds his gums soft, spongy, and inclined to bleed from the slightest touch. And it often happens that his mouth never regains its normal condition, and he goes through life regarding himself as a melancholy monument of the disastrous results of strong medicines.

In the meantime a member of his family is attacked by the same, or a disease similar to his own, and he resolves that there shall not be a second mouth-martyr in his family ; and so he calls in a genuine Indian Root Doctor, who doses the victim with copious draughts of disgusting decoctions, till the disease is either rooted out, or exhausts itself. And then he finds the mouth and teeth in the same deplorable condition that had previously occurred after the "strong medicines."

In the course of time another member of this unfortunate family is stricken, and almost regardless of the general constitution, in the awakened zeal for the welfare of the mouth, a man is called in to administer *nothing*, done up in sweet little pellets of sugar of milk. Faith, hope and *time* at length result in convalescence ; and with all the expectant enthusiasm of hope ripened by previous disappointments, the mouth is examined, only to find the disgusting demon of disease and decay affecting the gums and teeth. And, now, faith in medicine is shaken—shaken, too, in its stronghold, in a mind that had hitherto believed in all the infallible cures for incurable diseases, recommended by too credulous ministers of the gospel in the religious newspapers.

And, though the now bewildered man had been always prompt to call medical aid for colds, colics, and sore toes, he totally neglects this condition of the mouth, fully believing, to all appearance, that it is incurable—that, as it has been brought about by medication, medicines, instead of curing, would only aggravate it. The decays in the teeth are left unfilled, and these invaluable organs rot away and are lost, the overloaded vessels of the gums go unrelieved, the breath becomes fetid, the entire mouth inflames, the throat becomes an open sepulcher, the stomach groans under the loads of poison sent to it with the food, the bronchial tubes and air cells take on disease from the poisoned atmosphere carried to them in respiration, and finally the patient can be complimented only as a walking hospital, or a lively corpse. It may be readily inferred that he is dead, for, "by this time he stinketh." The pic-

ture is not overdrawn. Words fail. They are meant to describe all possible ideas and objects—but, nay! verily, they totally fail here.

Now, there is something wrong in all this; and wherein does it lie? To detect the wrong is always the first step toward the right. When a small boy, the writer of this was lost in the darkness, having taken the wrong road. After having discovered the mistake he kept on, hoping to find a by-way that would lead to the right road. A cheerful light from a farm house smiled on him and he called for information. The kind old farmer, in the most fatherly manner, offered him the hospitalities of his house, which had to be declined. Then he told him that the only way was to go back to the forks of the roads, and take the right one. He had left but a few minutes, when the farmer called after him, saying, "My son! if, in the journey of life, you make a mistake like this, follow these same directions." No better advice can be given to the young dentist or physician; and it is not bad counsel to any one. So, in the case of the mouth-martyr described; his inference is wrong, and should be promptly abandoned, and the correct one adopted.

In describing this unfortunate victim, it is not understood that he stands alone, or is even lonely in his belief. As an aged, experienced physician, the writer can testify to the almost universality of this belief. In view of the very slight foundation it has to rest on, its wide diffusion is remarkable. It is true that some medicines injure the teeth by chemical corrosion. These are found among the concentrated acids often administered as tonics. Elixir vitriol and tincture of iron belong to this class, sulphuric acid being the active principle of the former, and hydrochloric, sometimes called muriatic acid, the corrosive agent of the latter. All such agents do their mischief by abrading the enamel, or the dentine, if exposed, thus leaving roughened surfaces favorable to the lodgment of particles of food, and other matters liable to fermentation or decay; and as some of the special acids, which directly cause decay, may result from such fermentation, these medicinal agents may be classed with the predisposing causes of dental caries, though nothing can be more absurd than the claim that these acids, administered as medicine, now and then, can *directly* cause caries of the teeth.

Much can and should be done when these corrosive medicines are used, to guard against their deleterious effects on the teeth. Some suggest their administration through glass tubes, to prevent their contact with the teeth; but the device is not very efficient. But few can swallow a liquid without letting it touch the teeth. The immediate use of an alkaline carbonate, in solution or substance, is more reliable. Prepared chalk, which is carbonate of lime, may be applied to the teeth immediately, with a tooth brush, or rubbed on them with the finger, if the patient is a child; or carbonate of magnesia, soda or potash will answer as well. The soda and potash carbonates, being highly soluble in water, may be found more convenient in practice. Let the solution of the one or the other be freely applied with a soft brush, immediately after the administration of the acid.

But let it be understood, all the time, by physician, dentist, patient, and all concerned, that the morbid state of the mouth is caused by disease, rather than by the medicines used in combating it. With this thus fully understood, both physician and dentist are ready to act for the cure of the mouth, with full hearty co-operation of the patient.

A few words in regard to the production of this condition by the disease, may be profitable. It is well known that throughout life, every tissue of the body is undergoing disintegration. The teeth are not exceptions to the rule. The changes they experience are similar to those in other bony tissues, being probably slower in their progress, on account of the greater density of the teeth. Atoms, molecules, corpuscles, or what not, fulfill their functions, perform their offices, discharge their duties, die, and are dissolved and carried out of the system by the excretories, thus making room for new material, full of life and function, to take their places, to perform like duties in their turn, and afterward to pass away after the example of their predecessors. When this waste and repair are exactly balanced, the constitution is maintained. When the waste is greater than the repair, the system declines. The repair is kept up by the process of nutrition. Disease weakens or destroys the various functions concerned in this process. When a function is destroyed, of course the constitution is thrown off its balance. The same is true, to a less extent, when a function is only impaired; and, besides, the impaired function is able to form only abnormal or depraved tissue. In a prolonged

attack of illness, then, there may be both the conditions above described. Tissues fail to be nourished because function is impaired or destroyed; and the additional tissue which has been furnished is found to be defective in character and material. It is probable, therefore, that all experienced dentists, who are close observers, find the teeth of patients, who have recently suffered from prolonged, wasting disease, brittle, chalky, dull in color, easily cut, readily broken, deficient in organic matter, with a lack of lime salts, as well—in short, the teeth have been sick, and are, as yet, barely convalescent. At the same time, the mucous membrane of the mouth is found engorged, congested, irritable, if not inflamed; while the gums are swollen and spongy, their margins inclined to separate from the necks of the teeth, the festoons sometimes dense and smooth, all points on the membrane ready to bleed from even slight wounds. And this state of the mouth, by the popular mind, is charged, in full, to the medicines used, and, therefore, as already mentioned, medical treatment is ignored or rejected, in the full belief that a resort to it would only increase the difficulty. As the necks of the teeth are sensitive to thermal changes, the mouth is not washed; and as the gums readily bleed, the tooth brush is rejected as if an instrument of perdition. The beautiful gems, intended to furnish life with its smiles, are thus left to rot in the fetid filth which surrounds them.

The stomach wails, from overwork, and finally fails to digest the befouled, unmasticated food forced into it, and nutrition fails. Disintegration predominates, dead matter accumulates in the circulation, there to putrefy, and be given off as excretions through organs which should be, and in health always are, organs of secretion. A disastrous compound resulting from this putrefaction is ammonia, which, when eliminated by the salivary glands, or membranes of the mouth, takes the carbonic acid from the buccal fluids, and thus causes the precipitation of the lime salts from the saliva, in the shape of tartar or salivary calculus. If neglected, this soon results in destruction of the sockets, and loosening and loss of the teeth; more teeth being lost in this way than in all others. This terrible condition, resulting from the presence of ammonia in the fluids of the mouth, was, probably, first clearly described by Dr. George Watt, in various meetings of dental societies; and it was made the subject of a brief paper read by him, before the Ohio State Society, a year or two ago. It is said that

only the failure of his health prevented its being laid before the profession, in a monograph, years ago.

A question naturally arises here, as to which of the varieties of dental caries, is to be found in the teeth, in consequence of protracted illness, such as has been under consideration. This depends on a variety of circumstances, such as the nature of the disease, its severity, the temperament of the patient, etc. As the disease progresses, the attending physician can, if he understands the nature and causes of the several varieties of dental caries, give a reasonably correct prognosis as to which, if any, variety shall follow. Patients of bilious temperament, who ordinarily suffer from constipation, will often, during protracted illness, give off with the breath, and also by the skin, an abundance of sulphureted hydrogen. Such a patient will be almost sure to have black decay, if any. The writer has seen such patients with black decay on all the approximate surfaces of the upper front teeth, all recent, having begun during or immediately after attacks of typhoid disease.

But if, during the progress of the attack, the physician finds the breath and the perspiration ammoniacal, he should warn the dentist against the prospective ravages of white decay, the most deadly of all. As to white decay resulting from the presence of ammonia, consult *Watts' Chemical Essays*, or an extract from the same in appendix to *Taft's Operative Dentistry*.

But if the attending physician detects neither ammonia nor sulphureted hydrogen in the patient's breath, it may be taken for granted that if caries results from the disease under treatment it will be of the most common variety, that which is caused by hydrochloric acid, and in which most of the organic portion of the dentine remains in the cavity of decay. This form of caries is apt to accompany or follow our autumnal fevers, dysentery, etc.

It is scarcely necessary to notice, in this connection, that after chronic gouty or rheumatic attacks, that form known as chemical abrasion, usually predominates. This abrasion, in such cases, is caused by lactic acid. In young patients, where starchy substances are allowed to accumulate about the necks of the teeth, a similar abrasion is caused by acetic acid. The peculiar trait of this variety is in the fact that the organic and inorganic substances of the tooth are dissolved with equal facility.

The preceding remarks lead to a practical question of great importance, and, after an attempt to answer it, this paper must close.

What, if anything, can be done, during and immediately after the attack of disease, to ward off or mitigate these deleterious results to the teeth and mouth?

No one can fail to see that in disease of the general system the dental organs must bear their proportion of the shock. "If one member suffer, all the members suffer with it." When the body is sick, the teeth are not well. Not only are they enfeebled, as to their resisting powers, but the general disease of the system causes them, to be surrounded by vitiated secretions, and other substances tending toward their injury. They have, thus, a two-fold source of danger.

Treatment during the attack of disease is to be mainly preventive. The most scrupulous cleanliness of the mouth should be enforced. When the patient is not able to cleanse his mouth with a soft brush, the nurse should do it for him. After washing, the mouth may be rinsed with a diluted solution of common salt. "Salt is good." It arrests putrefaction of the mucus and other nitrogenous substances found in the mouth. The mouth should be frequently washed; but it is especially important to attend to it morning and evening.

When the breath is ammoniacal the mouth may be washed with diluted organic acids—vinegar, or lemon juice, diluted; and, if not contra-indicated, reasonable quantities of these may be drunk by the patient.

When the breath is loaded with sulphureted hydrogen, the introduction of oxygen into the blood is indicated. For this purpose the chlorate of potash may be used, unless forbidden by some other symptom or circumstance. And in all these conditions the arrest of putrefactive tendencies is indicated. For this, salicylic acid will be found invaluable. A formula for its solution is given in the February number of the *JOURNAL*, which will be found very convenient when it is to be administered. Three to six grains a day, divided into three or four doses, will be found efficient.

The treatment, thus far, pre-supposes the co-operation of the physician and dentist, or the time when physicians shall be more familiar with diseased conditions of the teeth than they now are.

But the patient reaches convalescence, and is given over by the physician, with the teeth and mouth as already described. In this deplorable and filthy state, he reaches the dentist ;—and now what ?

It is taken for granted that the dentist who is at all capable of doing justice to such a patient is not expecting a series of recipes. On the contrary, after laying down some general principles, and giving some practical suggestions, it is expected that he can do his own thinking. Brains can not be furnished through the medium of the printing press, and if they could, they would not, probably, be judiciously used by the recipients.

Should a farmer find a feeble horse in a filthy stall, and feel like affording him a favor, his first thoughts would not turn to oats, bran mash, corn, and condition powders. He would at once have the stable thoroughly cleansed, disinfected, and ventilated. So, the dentist, with good judgment, will remove all offensive foreign matter from the mouth ; he will use antiseptics, disinfectants, astringents, and stimulants to the gums and mucous membrane. He will polish the teeth, to restore their functions, and to facilitate cleanliness ; and all this will he do before proceeding to fill ordinary cavities of decay. Prof. J. Taft, at the late meeting of the Mississippi Valley Association, is reported as saying that this is not the ordinary course pursued by a majority of dentists. It is very unfortunate if his statement is true ; but he has not, probably, made it hastily.

By the local treatment above suggested, in ordinary constitutions, the mouth will be brought to such condition as to permit filling the teeth. But when this is done, and the teeth are properly filled, has a cure been obtained ? Is a fever patient cured by washing him, and carrying his excrements from the sick-room ? His constitution may have so much natural vigor that, with the aid of the nursing described, he may be able to throw off, or wear out the disease, without special medication. In like manner, when the tartar is thoroughly scraped from the necks of the teeth, all portions of diseased tissue are removed, and the mouth is afterward kept scrupulously clean, a strong constitution may be able to do the rest that is needed in affecting a cure. But it is not good practice to run such risk, or to so tax the vital powers. When the secretions of the mouth are normal, no tartar

can be deposited, as the lime salts, both the phosphate and carbonate, are held in solution by the free carbonic acid dissolved in the buccal fluids. But when the waste of tissue, from general disease, or in defective nutrition, becomes so great that the resulting ammonia is not all eliminated by the kidneys and skin, it escapes, as an excretion, through the salivary glands or mucous follicles, and is thus in solution in the fluids of the mouth. There it finds, and combines with the carbonic acid, which being thus removed from these fluids, leaves them unable longer to hold the lime salts in solution, and they are, hence, precipitated in the form of tartar.

The fluids of the mouth, when charged with ammonia, are generally, if not always tenacious, or ropy. This should be regarded as an indication of danger. The patient is not cured while it exists. And right here, the internal use of acids, either mineral or organic, is indicated. Five to twenty drops of elixir vitriol, according to the age and vigor of the patient, may be given after each meal. Or acetic acid, in the shape of vinegar, or pickles, will answer quite as well. Lemons, and acid fruits in general, produce favorable results. When the saliva has regained its normal physical properties, and the ammoniacal odor is gone from the breath, the patient may be regarded as cured in this respect, to be dismissed, of course, with the most earnest injunctions as to cleanliness of the mouth in all future time.

If the sulphureted hydrogen breath should prevail, after the local care necessary to the mouth, a course of chlorate of potash is to be recommended. It may be used at the rate of three to six grains after each meal. When rubbed up with four or five times its weight of white sugar, it is more pleasant, and it loses none of its efficiency if so combined.

When the tendency is to the hydrochloric acid form of decay, the patient should indulge, but moderately, in the use of common salt. Indeed, it is quite probable that this salt is much too freely used by a majority of Americans.

Much of this treatment has been already suggested by Dr. George Watt. If a second witness can aid in enforcing the testimony, all well. This paper suggests, in its general import, one of two things, if not both, viz: Either that dentistry must be a specialty of medicine, or physicians and dentists must cultivate a

closer and more cordial co-operation. The welfare of the human race requires it; and, therefore, in the "good time coming," it will be as suggested.

Societies.

"Two are better than one."—SOLOMON.

MISSISSIPPI VALLEY ASSOCIATION.

Organized 1845.

Meets annually in Cincinnati, first Wednesday in March.

President—J. W. Jay, Richmond, Ind.

First Vice-President—Wm. Van Antwerp, Mt. Sterling, Ky.

Second Vice-President—C. I. Keely, Hamilton, O.

Recording Secretary—N. S. Hoff, Cincinnati.

Corresponding Secretary—H. L. Moore, Cincinnati.

Treasurer—F. A. Hunter, Cincinnati.

ST. LOUIS DENTAL SOCIETY.

Organized December 1, 1856.

President—Edgar Park.

Recording Secretary—John G. Harper.

Corresponding Secretary—C. W. Spalding.

MISSOURI STATE DENTAL ASSOCIATION.

Meets annually; next meeting at Sweet Springs, first Monday in June, 1881.

President—John G. Harper.

Secretary—W. H. Eames.

Treasurer—James A. Price.

ILLINOIS STATE DENTAL SOCIETY.

Organized July 24, 1865.

Meets annually; next meeting will be held at Rock Island, first Tuesday in May, 1881.

President—J. Frank Marriner, Ottawa.

Vice-President—J. A. W. Davis, Galesburg.

Secretary—Edmund Noyes, Chicago.

Treasurer—E. C. Stone, Galesburg.

Librarian—G. H. Harrington, Delavan.

IOWA STATE DENTAL SOCIETY.

Organized July, 1863.

Meets annually; next meeting, Davenport, Iowa, Monday, May 9, 10 A. M.

President—M. L. Jackson, Oskaloosa.

Vice-President—A. O. Hunt, McGregor.

Corresponding Secretary—L. C. Ingersoll, Keokuk.

Recording Secretary and Treasurer—E. E. Hughes, Newton.

MISSISSIPPI VALLEY ASSOCIATION.

THIRTY-NINTH ANNUAL MEETING.

DISCUSSIONS.

REPORTED BY E. G. BETTY, D.D.S.

Programme of subjects:

I. Alveolar abscess and treatment.

II. Treatment of superficial caries of the teeth.

III. To what extent does vitality resist the encroachment of dental caries?

IV. Removal of the first permanent molars. When indicated?

V. Pathology and treatment of exposed pulps.

VI. Diseases of the antrum and treatment.

VII. To what extent should other materials than gold be used in filling teeth.

VIII. Artificial dentures.

FIRST SUBJECT.

DR. J. TAFT: Had made no special preparation for discussing this topic, and would rather some one else had started it. He said that abscess, in whatever tissue it occurs, is the result of inflammatory action. To comprehend the subject, several things must be taken into account: it is essential to know the susceptibility of the tissue in which it exists, as well as the idiosyncrasy of the individual. It varies in different subjects and tissues. In some it goes on with but little irritation; in others the disturbing causes are violent and the irritation great. The very first thing in the history of an inflammation is the *irritant*. The variety of irritants, alone, is a theme pregnant with material worthy of discussion. The next step that calls our attention, is the *irritation* caused by the irritant, following which is a *determination* of blood to the part, the determination itself necessarily involving some kind of irritation. In the brain, mental agitation or disturbance will cause a determination of blood to that organ. Next in order is *disturbance* of the *circulation*, an increase of flow in the part affected. It may come before irritation. The circulation may be increased or diminished, both taking place during a state of inflammation. The white corpuscles are retarded in their progress by adhering to the sides of the vessel. *Exudation* of *liquor sanguinis* now takes place. It is a passage of the watery portion of the blood through the walls of the blood-vessel into the surrounding tissues. *Swelling* is a necessary result of the increased amount of blood in the part, together with the exudated plasm. *Stasis* does not usually occur until the exudation has taken place. When all the parts are engorged we have true stasis. One capillary may be in that condition, or all may be. Down to this point in the inflammation, *resolution* may take place, or at any of the steps previous to and including stasis. The next step after stasis is *suppuration*, the formation of pus. When suppuration occurs there is more or less breaking down of the tissue. The suppuration may be confined to a small point. In a peculiarly susceptible individual, it may occupy a large territory. All tissues, including

bone, suffer from the suppuration, the bone breaking down. It has been said that the pus cells are the white blood-corpuscles, exuded through the coats of the blood vessels. In the copious discharge from a large abscess, it seems strange that the blood could give up so many leucocytes, when it is known they are comparatively few in number. The pus corpuscles, no doubt, also have their origin in the cell formation of the surrounding tissues. An alveolar abscess may be confined to the socket of the affected tooth, or may break down the process and involve a large territory of the neighboring soft parts. When considerable territory is involved, one course of treatment is indicated, in a small one another, though it may be very painful. This is merely a hasty glance at the pathology. An inflammation may result in one of three things: resolution, suppuration, become chronic. In the latter instance the parts do not readily yield, the active state subsiding into the chronic. The hardness in chronic inflammation results from a coagulation of the transudated fluids. It may remain in that state for a long time and finally break down. It requires a long time for the debilitated absorbents to remove the exudated products. Iodine may be applied for some length of time before an effect is produced.

DR. F. A. HUNTER: "After the formation of pus, must there necessarily be an exit for it?"

DR. J. TAFT: "No; the pus may remain, putrefy, be absorbed and cause septicemia. Do not believe in a pyogenic membrane, *per se*. It is merely a coagulation of exudated fluids, and an abortive attempt to re-absorb. The watery part of the pus is absorbed, leaving a cheesy pus, which, in its turn, becomes thinned and absorbed."

DR. W. D. KEMPTON: Said Dr. Taft's remarks had nearly exhausted the subject. Inflammation is essentially hypernutrition. The exudated lymph is capable of organization. In connective tissue the organized lymph will form new connective tissue. In other words, the exudation will organize, simulating the tissue in which it is exudated. The inflammation focuses itself where the pus is formed; at the periphery there is an attempt at organization. Where these two meet is the point at which what is called the pyogenic membrane is formed.

DR. J. TAFT: "The parts are not necessarily over-nourished.

In hypertrophied bone there is usually no line of demarkation between the original and added bone."

DR. KEMPTON: "In the pleura we have a distinct organized tissue between the two layers, though the tissue formed is an imperfect one."

Dr. James Taylor said there were some points about the sac-membrane he would like to have explained.

DR. TAFT: "The periosteum of the root plays no part in the formation of the sac. Would like the members to talk about the irritant which produces the inflammation. The periosteum itself, around the root, may not necessarily be destroyed; is frequently seen to remain, or to be partially destroyed, and, again, it totally disappears. When you take away the irritant you will always have resolution, the surrounding parts being relieved of the cause."

DR. JAMES TAYLOR: "In an alveolar abscess we find a sac, so-called, around the root, the exudated fluid forming a membrane and the pus forces it away from around the root. In the treatment of the abscess a good deal depends upon the systemic condition of the person. A mere discharge of the pus, in some cases, will produce a cure. In others, an impoverished system requires a long-continued course of constitutional treatment. Many cases of syphilitic poisoning resist all kinds of treatment. How will you treat alveolar abscess for such a subject?"

DR. J. TAFT: "The first thing to learn is the constitutional condition, whether or not the recuperative powers are good. If the exciting cause of the abscess can be recognized and removed, reparation ought to take place in nearly all cases. In some instances the tooth itself is the irritant, though there be no putrescent matter or gas originating from it. We must have knowledge of any incidental causes, should they exist, which prevent reparation. Malarial poison may be present in the system. In scrofulous persons the tissues are barely able to hold themselves together. With a syphilitic case, either turn the patient over to a physician or let the dentist treat it himself if he knows how."

Adjourned.

FIRST DAY—AFTERNOON SESSION.

First subject resumed.

DR. KEMPTON: "Dr. Taft left the subject at the point of suppuration. An important process takes place after this. The

exudated material is organized through a process known as granulation. Loops of coagulated material appear through the exudation and become the blood-vessels, nerves, etc. The abscesses under consideration are frequently over-treated."

DR. J. S. CASSIDY: "In the treatment of abscess, escharotics of various degrees of power are used. What is the practice in regard to teeth that are dead and have been treated?"

DR. KEMPTON: "An opening is to be made through the process, and the abscess treated as an open one, giving it a chance to heal up from the bottom."

DR. CASSIDY: "Would extract the tooth when treatment is not efficacious and there is suppuration from the abscess."

DR. W. F. MORRILL: "For treating, boracic acid is perhaps one of the best remedies we have. It disinfects a tooth loaded with putrescent matter. Is curative if the case is not an obstinate one."

DR. J. W. JAY: "Cleans out the tooth, by washing or otherwise. Introduces cotton saturated with carbolic acid, following it with a small bit of unvulcanized rubber, thus forcing the medicament through the fistulous opening. Or, the tooth can be injected with a mixture of carbolic acid, glycerine and rain water. Would like to know why an abscess starts up again, after the root and teeth had been filled."

DR. G. W. KEELY. "The surest cure for an abscess in a syphilitic patient, is the removal of the tooth, but would try the usual methods first, to save it. With a scrofulous habit, the case is stubborn, trouble occurring even after the root had been filled. In ordinary abscess, with fistulous opening, after getting through the apex of the root, half of the operation is accomplished. No case is to be overtreated. If there is a considerable opening at the apex, gutta-percha is the material for closing it. If the canal is small, a solution of it can be used. Injection of carbolic acid into an abscess without an external opening, creates irritation, and does harm. If there is an opening, the fluid may be washed through without much trouble resulting. May not the formation of an abscess, be an effort of nature to prevent the absorption of putrescent matter in the pulp canal? Related a case of abscess of twenty years duration; every few days, pus discharged through the patient's nose. Tooth, upper incisor. Cut in from the palatal surface and found a large opening at the apex. Washed out with

syringe and filled with gutta-percha. The treatment was successful."

DR. J. TAFT. "If one can understand his case well, he can treat with intelligence. Sometimes an abscess heals spontaneously. If caused by *debris* of the pulp and the latter be removed, the parts will be restored. Usually the cause or causes, are removed; but if they cannot be removed, the trouble then keeps up. There may be a deposit at the end of the root, which cannot be reached. Caustic treatment is not always required. Clean away the irritant and do not over-treat. Should the periosteum be diseased, it may keep up the suppuration. Carbolic acid not only acts as a stimulant, but coagulates the albumen, thus filling up the abscess cavity. Generally it is so used that harm results. Gentle stimulus is the true treatment, after *debris* is removed. Should a fistulous opening exist, fill the root and treat through the fistula."

DR. H. A. SMITH: "A chronic abscess is evidence of systemic inability to restore the parts. In such a case, would resort to heroic methods. Either cut away diseased tissue, or destroy with escharotics. The object is to change the conditions by producing an active state of inflammation. Despairs of curing abscess in anaemics and consumptives."

DR. J. TAFT: "In consumption the blood is not properly aerated, the tissues consequently lose their tone, and readily yield. They cannot repair damages."

DR. W. S. HOW: "Also instanced a consumptive case he could not hope to cure. Copious discharge of pus, bony walls honey-combed. Used creosote and nitrate of silver with some success."

DR. J. W. JAY: Extraction is a sure cure for an obstinate abscess.

Subject passed.

SECOND SUBJECT.

DR. JAY: "What is meant by superficial caries?"

DR. G. W. KEELY: "Slight decay usually found on the proximal surfaces of the teeth. Wedge the teeth apart, getting plenty of room. Remove the decay with file and corundum tape. When possible, the disc can be used; should the cut surfaces remain sensitive, allay with nitrate of silver. Perfect cleanliness is an essential element in the subsequent success of this treatment."

DR. J. TAFT: "Not one in five of the profession takes any notice of cleanliness of the teeth. The cleaning is left to the last. The first thing to do, in putting a mouth in order, is to thoroughly remove all deposits upon the teeth, then look for superficial decay. Instead of using wedges, use the Jarvis separator. The disc, emery paper, corundum tape, etc., accomplish the work. The failure is in not detecting the decay in the first place."

Subject passed.

EVENING SESSION, FIRST DAY.—THIRD SUBJECT.

DR. F. SAGE: "Does not think vitality has anything to do with the prevention or resistance of decay. In the dead body the teeth do not decay. When we remember that secondary dentine is formed, we are apt to think there is some vital or recuperative force."

DR. KEMPTON: "Teeth in skeletons are not subjected to the same conditions as those in life. In the stomach, upon death after a meal, the acid gastric juice attacks the stomach walls. In the mouth, the vitality of the teeth resists decay to a greater or less extent."

DR. J. W. JAY: "It is true that some teeth never cleaned, do not decay. Again, others well cared for are destroyed. It cannot be accounted for, unless the person does not eat enough bone-making material."

DR. J. TAFT: "Living teeth will better withstand the attacks of devitalizing agents. Very soon after the disappearance of vitality, a tissue is rapidly decomposed. While vital, the tissue retains its integrity. Evidently, vitality is the bond holding together the elements composing tissue. The teeth are made up of both organic and inorganic structures. The membrane lining the pulp-chamber is a highly organized tissue. The inorganic constituents are held together chemically. In very young teeth, when devitalized, they soon change color because the organized constituents are of large proportion. A solid, well-built tooth, dead but with good surroundings, will better resist decay than a living one with a larger proportion of organized tissue, and in poor surroundings. Magitot has shown that the filling up and condensation of the tubuli, constituting the "Zone of resistance," is a process showing the operation of vitality in combating the

encroachment of caries. The teeth of the skeleton, crumble and can be picked to pieces; their organic parts are deteriorated."

DR. SAGE: "At first understood that vitality in general was under discussion, and not as applying specifically to the teeth."

DR. W. H. SILLITO: "The question itself has not been discussed at all, as the resisting influence of vitality is admitted in the question."

DR. A. O. RAWLS: "Can the resistance of vitality be measured? Tissues are susceptible of change in the way of irritation, etc., just in proportion to the resistance of the general vitality. There is a difference of decay when the vitality is the same, due to the influence of the surroundings of the teeth. The principal resistance of a tissue is by a continuity of its substance. Also to the maintenance of circulation and affinities of tissues. If the round of circulation is disturbed, there will be a loss of vitality. We cannot get at the subtle force, vitality, and must argue only from material things as we see them. In dental caries we have a breaking up of the round of union in the dentine; the parts do not continue to be nourished, and vitality is then destroyed."

DR. J. TAFT: "If we are not to discuss subtle forces, it relieves us from taking into account chemical force, specific gravity, etc., all subjects for scientific discourse and investigation."

Adjourned.

SECOND DAY, MORNING SESSION — FOURTH SUBJECT.

Dr. F. A. Hunter advocates the removal of these teeth in early life, under certain conditions. If they are, previous to twelve years of age, pulpless teeth, crowded condition of the arch, and in those where decay is so extensive as to preclude the possibility of making good, permanent fillings. It is a mistake to put in large compound fillings, when the room these teeth occupy is more valuable than themselves.

DR. J. TAFT: "It is occasionally well to remove them, at other times it is a mistake to extract, even though they be largely decayed. 'Tis only once in a while that it is well to extract them; on the average, nine out of ten cases result in injury. The premature removal of any tooth, especially the first molars, interferes

with occlusion of the jaws and mastication. The second molar tips forward and only one part of it antagonizes with opposite tooth. If they are diseased extensively and are not susceptible of curative treatment, their removal is indicated. Objects very seriously to such nomenclature as, 'six-year molar,' '*dens sapientie*,' 'wisdom tooth,' etc."

Dr. A. Berry agrees with Dr. Taft in this, that preservation is the true course. They should be kept to preserve the position of the other teeth. Many times they are extracted when not indicated.

DR. JAMES TAYLOR: "If a tooth is removed before occlusion is perfect, the whole antagonism is disturbed. In case of irregularity, what is the condition of the first molar? Are the pulps exposed? Now, at twelve years of age, the crown of the second molar is formed and the tooth is ready to take its place in the arch. If the first is extracted, the second falls forward and spoils occlusion. As a rule, where there is irregularity, extract in preference to filling. Between the ages of twelve and sixteen years there is a change of circumstances, necessitating a difference in method of practice.

Dr. E. Osmond agrees with Dr. Taylor. A father of large physique, mother small, will have children whose teeth will be crowded. Crowded teeth are imperfectly nourished. The type of the jaw is to be considered as well as the condition of the teeth.

DR. G. W. KEELY: "Also appreciates the value of the first molars, and objects to the meaningless nomenclature Dr. Taft mentioned. Frequently in children from seven to eight years of age, the first molar is largely decayed, pulp exposed, and large opening at apices of the roots. If treated and filled only one in a hundred such cases will be permanent. It is unprincipled to fill badly decayed first molars. [The Doctor placed upon the wall a number of paintings illustrating the success of extracting the first molars and drawing forward into their places, the second molars.] In case number one, a young miss, both superior canines appeared above the ridge and in front of the arch. Both first molars though sound were removed. The first molars of the inferior maxilla, badly decayed, were also extracted; the four at one sitting. The lower teeth were also somewhat crowded. The

case is still in progress. The canines will drop into place without the use of an appliance. In case number two, aged seventeen years, the superior right first molar was extracted. The bicuspid, canine and incisors of that side, all fell back leaving a large space between the centrals, interfering somewhat with speech. This case shows the fallacy of removing the first molar on one side only. The two subjects, removal of first molars and irregularity, have mutual bearings, and it is difficult to speak of one without touching upon the other."

DR. DENNIS: "If the canines should come through inside the arch, would you leave them alone?"

DR. KEELY: "No sir. In that case, an appliance should be used to pull them forward. They very rarely make their appearance inside the arch. In case number one, they will adjust themselves, the bicuspid on both sides falling back to make room. Would advise young men especially not to extract the temporary molars before the first permanent had appeared."

DR. J. TAFT: "When the points of cusps prevent perfect occlusion of the jaws, a little dressing down will remedy the trouble. In the majority of cases the space left after extraction of the first permanent molars, is not completely filled by the coming together of the remaining teeth. The gum is pressed upon in mastication and the locality becomes unfavorable for that purpose. Those teeth then are liable to get out of use and become covered with deposits."

DR. OSMOND: "Would relieve the stress on one side by the removal of a bicuspid, instead of making too large a breach by the extraction of a molar."

DR. H. A. SMITH: "Think that the profession almost universally condemns the first molars."

DR. J. TAFT: "Noted in the discussion of this subject a unanimity of opinion expressed. This is due to an underlying principle which all appreciate."

Subject passed.

SECOND DAY.—AFTERNOON SESSION.

The fifth and sixth subjects were temporarily laid aside and the seventh taken up for consideration during this session.

DR. JAS. TAYLOR: "The profession has erred during the last ten or fifteen years, in trying to permanently fill with gold young teeth. Being a good conductor of heat it keeps up a constant irritation. There are other materials that would serve a temporary purpose, giving the teeth time to mature. Regards tin as second only to gold as a material for filling, and answers the purposes as well in some instances."

DR. J. P. ULERY: "Thinks that one-half of the teeth met with, should not be filled with gold. Tooth-bone hardens better under tin and the plastic substances, as his long experience shows."

DR. JAS. TAYLOR: "Instanced cases of devitalization by uses of gold, when oxy-chloride would have saved them."

DR. J. C. McCAMPBELL: "The benefit of a non-conductor can be obtained by putting a layer of oxy-chloride under the gold."

DR. TAYLOR: "During a seige of typhoid fever the mouth is sure to suffer to a greater or less extent; and almost any kind of filling will more or less be damaged. In very sensitive cavities, tin or oxy-chloride is preferable to gold. There is not one tin filling put in now, to twenty formerly."

DR. H. M. REID: "Dr. Taylor, what proportion of your tin fillings saved the teeth during your experience of forty years?"

DR. TAYLOR: "Ordinarily tin adapts better than gold, and though it oxydizes slightly, it saves well. In a badly shaped cavity, cohesive gold will save as well as tin."

DR. J. W. JAY: "The subject is an interesting one, and covers many points of vital interest to all. Gold is not best in all cases. Strong, good, healthy teeth can be filled with gold with permanent success. Has not had much experience with tin foil. Soft, chalky teeth, with white decay, can hardly be saved with anything, for a great length of time. Tin is probably the best thing for them. Children's teeth, between ages of ten and fourteen years, would best be filled with tin. If gold is used, the fillings will have to be replaced in a short time. In young, sensitive teeth, the malleting of a gold filling is liable to produce trouble with the periosteum, and besides, by reason of conduction the gold will keep up an irritation. Will not put in any more gold for children, and prefers gutta-percha to the cements."

DR. A. O. RAWLS: This subject has occupied the attention of

the profession for the past four or five years, especially in the East. In his estimation, it is his ability to properly diagnose his case, then the treatment suggests itself. All the surrounding circumstances must be weighed in the account ; keeping in mind the constitutional habit of the individual. If the structure of young teeth is soft, it is better to use some plastic material temporarily, giving the teeth time to acquire their normal density. In such cases the tubules are large, and their tendency is to fill up and consolidate as age progresses. For that reason the temporary filling is indicated. It is bad practice to put in gold for the sake of prompt pay.

DR. J. TAFT: Various circumstances influence different individuals in the choice of materials. Filling materials differ much in quality from those formerly used. The nature of every case is to be studied, and judgment used in the selection of material, in accordance with the diagnosis. For the filling of children's teeth, gold is sometimes admissible, sometimes not ; the same is true with the teeth of the adult. The most practical thing for the case is the one indicated. We are too much accustomed to thinking that we are all alike, and that our patients are so too. It is impossible to put two different men side by side and have them run in the same groove. It does not exert a good influence upon the younger members of the profession, to say that we will no longer make large and difficult operations. Some delight in them, and are capable of showing what can be done—such a one is Corydon Palmer.

Ajourned.

THIRD DAY—LAST SESSION.

The fifth subject was, for this session, brought forward for discussion.

DR. J. TAFT outlined the anatomy of the pulp, illustrating with a model, and then took up the subject proper.

It is not always easy to diagnose the case, and know what is to be done for the tooth. It is irrational to treat all cases alike. We can learn something about the exposed pulp by finding out the systemic condition. In some instances the system will be impregnated with malarial poisoning, and, in localities where malaria prevails, it is almost impossible to treat and save exposed pulps. When we come to the pulp itself, we must note its sur-

roundings; whether the fluids of the mouth are intact or not; what condition the pulp is in, and the extent of exposure. Must also determine what degree of inflammation there is, and if there be pus, its quantity and character. Every operator must follow the particular course of local treatment with which he can secure the best results. In an ordinary exposure, the pulp is of a pink color, and may protrude a little through the orifice. If actively inflamed, the pulp is red and swollen; in this case depletion generally secures the best result. Or a mild anti-phlogistic may be applied. The removal and exclusion of irritants is a necessary part of the treatment. In a high state of inflammation, the surface of the pulp is brown; then use some agent that will remove the diseased portion. Pepsin paste will digest the dead and effete part of the pulp in a day or two; the pulp resuming its healthy pink color.

DR. J. W. JAY: "How is the pepsin paste prepared?"

DR. J. TAFT: "The liquid and powdered pepsin can be mixed together, or the powdered pepsin may be mixed with dilute hydro-chloric acid."

DR. WM. VAN ANTWERP: "The extract of rind of papaw will digest a beefsteak, and will also digest the dead portion of a pulp, and not touch the living tissue remaining. As soon as a pulp regains its normal color and gets back into its place, close it up. When all is ready, flow over it something that will be acceptable to the pulp. The oxy-phosphate is not irritant and is a good thing to use. All space must be filled."

DR. FLETCHER: "Cited several cases of hypertrophied pulps, in one of which the patient could masticate soft substances upon the protruding pulp."

DR. VAN ANTWERP: "Thought Dr. Fletcher's case could not have been a pulp."

DR. J. TAFT: "When the pulp assumes this condition, it is so degenerated that it is hardly worth while trying to save it; extirpation is the treatment. In these fungi or excrescences, the nerve tissue is almost if not wholly destroyed."

DR. OSMOND: "These growths are highly vascular, and if covered up, will produce trouble. It is not necessary to devitalize them, for they can be excised without pain."

DR. J. TAFT: "Calcareous deposits sometimes occur in tooth-pulp, and prevent the success of conservative treatments.

They are frequently the cause of neuralgias. They may completely fill the pulp-chamber. The presence of these bodies, should not be forgotten."

DR. VAN ANTWERP: "People inhabiting lime-stone regions, have more perfect bones and teeth."

The further discussion of the subjects upon the programme was cut short by a motion to elect officers for the ensuing year; after which election the Association adjourned to meet on the first Wednesday in March, 1882.

THE following in reference to the death of the venerable Doctor Rogers, was adopted by the Mississippi Valley Association, at its late meeting, March, 1881, and ordered to be spread upon the Minutes: "In reporting on the decease of Doctor Rogers, which occurred July 24, 1880, at the age of 84, we feel that God has taken from us one of the founders of this Society—one who, by his high standing and his medical qualifications, had always added lustre to the profession he had chosen for his life work. He might, perhaps justly, be regarded as the first permanently located dentist of this city. There he labored for the whole of his professional life. There he located to practice medicine, but fortunately, some troublesome cases, of dental origin, turned his special attention to the need of scientific dental surgery, and hence he soon became exclusively confined to this specialty, and for its ultimate good and elevation he assiduously labored. We find him connected with the organization of this Society; and when the Dental College was organized, he was appointed to the Chair of Pathology and Therapeutics; and, wherever placed, his special qualifications made him an efficient co-laborer. Therefore, while thankful for his great services and long labors, we yet, with sad hearts, bow to the dispensation of Providence in his removal from us, and that his family be notified of our action, to whom we offer our deepest sympathy. JAS. TAYLOR, *Chairman*."

CHICAGO DENTAL SOCIETY.

The Chicago Dental Society held their annual meeting on the evening of April 4, 1881. Of the forty members about

twenty of them were present. The election of officers for the ensuing year resulted as follows:

President—Truman W. Brophy.

First Vice President—C. P. Pruyn.

Second Vice President—A. W. Harlan.

Recording Secretary—E. S. Talbot.

Corresponding Secretary—M. S. Dean.

Treasurer—E. D. Swain.

Librarian—F. H. Gardiner.

Board of Directors—G. H. Cushing, E. Noyes and M. S. Dean.

The Society hereafter meets the first Tuesday evening in each month, except the months of July and August.

Editor's Specials.

“Wisdom is better than weapons of war.”—SOLOMON.

PERSONAL AND SELFISH.

JUST as the first number of the JOURNAL made its appearance, that is, on the 15th of February, the Editor was prostrated by a very severe attack of phlegmonous erysipelas—so severe that for two or three weeks all is dreamy. This sudden illness caused a neglect of many things, and among them, probably, the mailing of the JOURNAL, as a compliment, to some of our friends. Now, we can recollect nothing about it; but if any have been slighted it is hoped they will forgive as they hope to be forgiven. This illness, too, will probably exert a bad influence on the April number; it may delay its issue somewhat, though we hope not, for it is time the matter was in the printer's hands, and we have not yet left the house. A few heavy subjects laid out for discussion in this number will have to lie over; but they will not spoil. Some book notices must share the same fate. Nevertheless, through the kind help of friends, we expect to issue a good number. It is not proposed, under any circumstances, to have the

JOURNAL go back on itself or its promises. And our readers need not infer from this illness that our health is about to give way, and thus disappoint them permanently; for this attack had no connection with the chronic lack of power, but was acquired by direct inoculation, a fate as likely to befall a strong man as a weak one. Besides, we shall not likely treat erysipelatous cases hereafter, unless they should occur within our own family. We hope, therefore, we shall not be caught in the same trap. With thanks for the many expressions of sympathy from professional brethren, and with double thanks to our brethren of the Xenia Academy of Medicine, who rallied as to the rescue of a drowning brother, let us hope that a not distant day shall find us ready for full duty.

WHAT THEY SAY ABOUT US.

PRIVATE letters, by the scores, testify that we—that is, we the JOURNAL—are pretty—positively good-looking. But, like the girls, we tried to be. We gave our mind to it, in a manner second only to our effort to be useful. And our exchanges, as far as we have received them, bear similar testimony, but among them all we believe the *Missouri Dental Journal* caps the climax. Just hear it: “The first number of this new journal has been received, and we unhesitatingly pronounce it the most beautiful in appearance of all the dental journals published.” Of the editor he says. “His ability is universally conceded, and now that he has regained his health, we may look for many good things to flow from his facile pen.”

“His articles are always readable, and barring the inconsistencies and unphilosophical dogmas of allopathy, to which he holds, he is the peer of any man in dentistry or medicine.”

Well, even Saint Paul, lest he should be exalted above measure, was supplied with a “thorn in the flesh, a messenger of Satan, to buffet him,” and, with the hope that it may have an influence similar to Paul’s thorn, we shall submit to the charge of holding to “allopathy,” (though not guilty, as we understand the term), and will not beseech the Lord thrice for its removal, relying on His grace as “sufficient.”

If the definition mentally given to "allopathy" is taken, then are we guilty of holding to it, as charged in the indictment; but, really, on the *'pathy* question, we are in favor of the path that leads most directly from disease to health. But we have, long since, ceased to discuss the subject of homœopathy with those who hold to it; and it is so unlike what we regard as the science of medicine, that we are not surprised that our sentiments are regarded as a serious defect in our character.

HIGH-BLOWN, IF NOT HIGH-FA-LU-TIN.

WHEN the old world bellows, we must listen to and respect the roar; and, on this principle, we publish the following from the *British Medical Journal*;—

"A Triumph of Dentistry.—At the last meeting of the Medical Society of Strasburg, reported in the *Medical Gazette* of Strasburg, Dr. Jules Boeckel presented, in the name of M. Sauval, dentist, a lady for whom the latter had extracted a small molar tooth for dental caries, with violent pain; and having found it slightly carious to the bottom of its root, he sawed off the points of the root, filled it with gold carefully throughout the carious channel, and then reimplanted the tooth. The lady was free from all her pain; the tooth re-established itself solidly in the mouth; and, at the date at which she appeared at the society (three weeks after the operation) the tooth served for mastication as well as her other teeth. This is certainly a remarkable example of what is technically described as a dental autoprosthesis with aurification."

This paragraph seems to be making something of a sensation in the press of Europe. This is somewhat indicated by the strains after wit in the use of big words. We can cordially join the *Missouri Dental Journal* in saying: "It seems to be the lot of the Americans to furnish the advancement in dentistry, while it is the province of our European friends to appropriate our labors—as far as they are able—without giving credit to their origin, and to furnish the lofty descriptive terms by which alone they can be admitted into the realm of science."

To American dentists this European paragraph would be funny, were it not stupid. But it is gratifying to think that we

take it in all its clumsiness, from a medical instead of a dental journal. Of course the European dentists are much in advance of its indications.

“ESPECIAL HONOR.”

SOME one, a friend, of course, has sent us a number of the Chicago *Inter-Ocean*, in which we find the following item:—

“ESPECIAL HONOR.—Dr. W. W. Allport, the well-known dentist, was made the recipient during the afternoon, of an unusual and special honor. Out of respect for his eminent services and professional ability, the degree of M. D., from Rush Medical College, was conferred upon him, and, in a special speech of congratulation and respect, President Allen presented him with his honorably deserved diploma.”

Now all this is most highly appropriate and satisfactory. Like ourselves, Doctor A. had a desperate and continued contest, in early life, with that Yankee sawmill power known as “the force of circumstances.” Dr. A. was not helped in his successful career. He helped himself. In that contest the victory did not perch on the banner of the circumstances. They were forced to surrender, and even to rally and fight under the banner of their late antagonist, as for many years they have been largely in his favor. Dr. A. has honestly earned his honors, and he will wear them gracefully. Old Rush will never blush for her honorary *Alumnus*.

It would be well, if other reputable medical schools would follow the example thus set. We know a number of dentists who by their energetic activity in the advancement of medical science, have richly earned the degree, and we would be very glad to see them recognized. Rush has honored herself by this act.

EXTRACTION OF TEETH DURING PREGNANCY.

SOME writer in the *Cosmos*, signing himself “H. H. B.,” says, “The experience of my tutor for thirty-five years, and my own for twelve years has (have?) taught me never to extract a tooth for a woman during pregnancy for fear of bad results. In lieu I

give sedatives to such patients with topical treatment of aching teeth."

And thus, H. H. B. has done as much mischief as he well could with so few words. Thirty-five, and twelve years look formidable. A man ought to learn very much in periods so long. But how has he been taught? How many aching teeth has he extracted for pregnant women? How many his preceptor? How often has such extraction been followed by "bad results? And how bad were these results? And in what did their badness consist?"

Ever since 1844 we have done more than our share of extracting, and we have never, either as physician or dentist, hesitated to extract aching teeth for pregnant women, whenever the toothache could not be otherwise controlled. Any other practice is cruel and dangerous. Five minutes endurance of toothache is more likely to cause miscarriage than is extraction, provided the operation is performed by one fit to extract teeth. Often, and at almost all stages of gestation, have we extracted aching teeth to prevent miscarriage; and invariably with the most satisfactory results. A young married woman suffered with toothache almost the entire period of gestation. The offending tooth was beyond redemption; but she had been taught, as had her physician, that it was necessary for her to bear the pain. When it was supposed that labor had begun, we were sent for to extract, and the offending member was quickly removed. In a very brief period the uterine pains abated, and her confinement did not occur for several days. This is not a solitary case. We have had others nearly similar. The trials of maternity are sufficiently fearful, without the addition of unnecessary torture from toothache.

But when a woman in this trying condition is to submit to the operation of extraction, prudence should be exercised by the operator. All undue excitement should be avoided. The patient should be soothed and pacified. Kindness and firmness combined in the operator will give her confidence; and thus the nervous shock will be greatly mitigated, if not banished. Of course, it is not good practice to extract when the pain is otherwise readily controllable. A woman engaged in the great work of adding a body, soul, and spirit to the catalogue of the human race, is to be disturbed as little as is practicable; and it is because extraction is a lighter tax on her vital force than is prolonged toothache, that

this practice is here recommended. To subject a woman to three, six, or nine months torture which is altogether unnecessary, is malpractice, in its most barbarous aspect. We advise H. H. B. to revise his experience.

“ OLD WAR-HORSE.”

THE *Items of Interest* calls the Editor of the JOURNAL, “ the old war-horse ! ” That’s a little rough on a young fellow just setting out. Why call him a horse ? Is it because he has been ridden by members of the profession who didn’t like to do their own journeying on the road to professional success ? Ridden bare-backed, with whip and spurs, with but a limited supply of oats, and no “ condition powders ”—is that the reason he’s a horse ? But why *war* horse ? He never made war on anything—was always a peacemaker. But what’s in a name ?

THINK CLEARLY.

PROGRESS in mental attainment is very seriously retarded by a lack of clearness in thinking. One idea fully mastered is a clear gain in the realm of thought. Not only this, but the effort in acquiring it develops the brain, and thereby strengthens the mind. But beclouded thoughts are not reliable mental capital, and the brain work used in their acquisition never fails to weaken the mind. Let the mind become accustomed to a lack of clearness in thinking, and such habit of thought soon becomes the standard of the individual’s brain power. On the same principle the power of thought is weakened by divided attention. The brain, like any other organ, is to be developed by exercise ; and to bring about the best results the organ should be exercised to the utmost reach of its power and energy, but only for a limited time short of fatigue. But, when the attention is divided, one part of the brain is exercised on one subject, and another part on a different one, and neither portion of the brain can be thus exercised to its full capacity. If a student, then, or any thinker is about to be interrupted, he should submit to the interruption at once, and not try to reach a good stopping place, having the mental power di-

vided between the subject on hand and the interruption. If writing, stop, if in the middle of a word, and when permitted to resume, the mind will take hold, as if nothing had happened.

In our own profession we have men who, in speaking and writing, show a great lack of clear, clean cut thought. A lack of attention to definitions is often the cause of the misfortune. How many fail to diagnose clearly between neuralgia and inflammatory pain. How few think clearly just what neuralgia is. To such, we commend a careful study of the first article in the present number of the JOURNAL. With this article clearly understood, it will be easy to apply its principles and doctrines to the details of our specialty. Dentists frequently have opportunities to investigate the hereditary manifestations of neuralgia. Some of the facts given by Dr. W. are truly startling. We hope his article will awaken deep thought.

OHIO COLLEGE OF DENTAL SURGERY.

THE commencement exercises of the thirty-fifth annual session of this college were held in College Hall, Cincinnati, Thursday evening, March 3, 1881. There were eighty-one matriculants and thirty-nine graduates. The President of the Board, Dr. G. W. Keely, conferred the degrees. See his address in present number. Prof. H. A. Smith, dean of the faculty, awarded the prizes. The valedictory address was given by Rev. Nathaniel West, D. D., and the class oration by H. D. Eggers, D. D. S. Prayer, music, etc., as usual.

ADVICE TO WRITERS.

THE following stanzas, though not new, are pertinent. As yet, however, no contributor to the JOURNAL, except the editor, needs the advice. It is therefore meant for him and those prosy fellows who write for our exchanges. Missionary work, you know. Of their authorship we are ignorant. Their advice accords with that often given by our best teacher. "Now," he would say, "when your composition is ready for revision, scratch

out all the adjectives that can be omitted without destroying the sense. The English language is strong, but must not be too much diluted."

BOIL IT DOWN.

Whatever you have to say, my friend,
 Whether witty, grave or gay,
 Condense as much as ever you can.
 And say it in the readiest way;
 And, whether you write on rural affairs
 Or particular things in town,
 Just a word of friendly advice—
 Boil it down.

For, if you go spluttering over a page,
 When a couple of lines would do,
 Your butter is spread so much, you see,
 That the bread looks plainly through.
 So when you have a story to tell,
 And would like a little renown,
 To make quite sure of your wish, my friend,
 Boil it down.

When writing an article for the press,
 Whether prose or verse, just try
 To utter your thoughts in the fewest words,
 And let it be crisp and dry;
 And when it is finished, and you suppose
 It is done exactly brown,
 Just look it over again, and then—
 Boil it down.

For editors do not like to print
 An article lazily long,
 And the general reader does not care
 For a couple of yards of song;
 So gather your wits in the smallest space
 If you'd win the author's crown,
 And every time you write, my friend
 Boil it down.

DIGESTION OF TOOTH-PULP.

WHEN a portion of the tooth-pulp is dead, or dying, while subjacent parts are alive, with normal circulation, it is very important to get rid of the dead or dying portion, without undue irritation of the parts beneath. Some have claimed that they

can cut away the dead surface with a sharp instrument, and yet save alive a good portion of the pulp. The operation must be very delicate; and, in view of present attainments and methods, we think it is quite unnecessary. The pulp is a soft tissue, possessed of a high degree of vitality; and it no more follows that it must be extirpated on account of a sore on its surface, than that a finger must be amputated on account of a felon. The dead tissue must be removed, however, but this is better done by digestion. At the late meeting of the Mississippi Valley Association, Professor J. Taft suggests its removal by pepsin paste, prepared, by mixing to proper consistence, the liquid and powdered pepsin, or by mixing the powder with dilute hydrochloric acid. This is effective. For the same purpose, Dr. Van Antwerp suggests the use of the extract of the rind of papaw. This, he says, will "digest the dead portion of a pulp, and not touch the living tissue remaining." Dr. V. is good authority. We are not familiar with this extract, nor with its uses. Is it officinal, and obtainable in the drug stores? Or must the operator prepare it himself? And, if so, how? Will Dr. V. tell us all about it in the next number of the JOURNAL? Of course he will. He's too kind to refuse.

UNCULTIVATED NOMENCLATURE.

IN ancient times a man must write a book, plant a tree, or rear a son, or be regarded as a failure in society. Some of our profession act as if they hoped to escape sentence as failures by coining new words. There can be no objection to the introduction of new terms if those in use utterly fail to express the idea seeking for utterance; but there is no excuse for the barbarous terms used by some, in our young profession, who are ambitious to gain a reputation for learning. The word "dentos" seems to us to confuse thought rather than to aid it. It means too many things, or rather, its meaning is too indefinite. If we understand the use made of it by its god-father, it may mean enamel, dentine, cementum, if not pulp and periosteum. Unless it represents a definite idea it should be rigidly excluded from professional language.

But a more barbarous term still, is "pulpitis." It is nothing

short of disgusting. Its originator has probably noticed that in naming inflammation of individual organs the Greek name of the organ and the suffix "itis" are combined to give the desired expression; and so, he must say "pulpitis." To be consistent, he must call inflammation of the mouth, not *stomatitis*, but mouth-itis; he must not say gastritis, but stomach-itis, liver-itis, brain-itis, etc.; and to the scholar, these will not prove more disgusting than his pet, pulpitis.

An affectation of learning, without the real attainment, can do more to bring our profession into contempt than any other agency. We fondly hope the young, at least, will fall into no such traps. We have used only the two words in illustration. Their comrades are easily recognized. Let them all fall back into oblivion, as they deserve.

REPORT OF DISCUSSIONS.

WE were sadly disappointed in not being able to attend the March meetings in Cincinnati. A special cause of regret was found in the fact that we desired an abridged, condensed report of the discussions of the Mississippi Valley Association. We expected to make the report as desired, and felt that we could not describe to any one what we wanted in that line; but our young professional brother—seems more like a son, however—has met the crisis. Of course we could judge better if we had heard the discussions, but it seems to us that Doctor B has happily saved the sense, and left the nonsense, if there was any, to the four winds. But blood will tell; and the doctor is a born reporter.

Judging from observation in past years, we would infer that anything like accurate reporting is very difficult. We have sometimes tried those having experience as reporters before their coming into the profession, and from such we expected the best possible results, yet we have been doomed to disappointment. We can recall instances in which, in the report of our own remarks, we were made to say the exact reverse of what we tried to say, whenever a misrepresentation was possible. As a consequence, we became morbidly sensitive on the subject of reports,

and had to call in the aid of all our little stock of philosophy, as well as our constitutional indifference. But now we feel better, and cordially thank Doctor B. for our improved feelings.

There is a goodly proportion of food for thought in these discussions. We hope all, but especially our younger readers, will carefully peruse the report. Let the advanced thoughts be compared with the authorities, and carefully digested.

LIMESTONE REGIONS.

IN our report of the discussions of the Mississippi Valley Association, in the present number, Dr. Van Antwerp is reported as saying that "People inhabiting limestone regions have more perfect bones and teeth." This accords with the opinions of other observers, and if the statement is true, what is the explanation? Is it that the fruits and vegetables of these regions take up and reserve more lime in their development and growth than elsewhere? And, further, that the animals whose flesh is used for food, feeding on the grasses and grain of these regions, get and lay up more lime than such animals do in the sandstone regions? This can be determined by analysis. Or, is the lime dissolved in the water directly assimilated? In our February number we published the report of our committee of hens, which showed that they could assimilate lime directly, when used in their food. The questions raised by Dr. V.'s remark are quite important: and we hope other observers will give us their views on them, and we shall take pleasure in laying them before the readers of the JOURNAL.

BALTIMORE COLLEGE.

THIS mother of colleges held its forty-first annual commencement, March 2, 1881. We learn from their programme sent us that there were ninety-seven matriculants in the late class, and fifty-three names are in the list of graduates. Of foreign countries represented in this class we find New Brunswick, Germany, Cuba, and South Africa. We have not room for the names of

the graduates. Devotional services, music, etc., varied, and enlivened the exercises.

LABOR UNDER DIFFICULTY.

WILL our readers have the kindness to overlook defects and shortcomings in the present number? It is wholly gotten up in the sick-room, as we recover from a very severe attack of an acute disease, and before we are able to visit our office. We have reason to hope that such an occurrence will not disappoint our readers soon again, as this attack was contracted by contagion, and had no connection with, or relation to our chronic difficulty. We speak reluctantly of these personal matters, and only as an act of justice to our worthy publishers.

Correspondence.

"I charge you that this epistle be read."—PAUL.

DEAR EDITOR :

THE OHIO STATE DENTAL JOURNAL has made its appearance, with yourself as editor, and, desiring most heartily the success of the new enterprise, nothing doubting but that it will greatly benefit and improve our noble profession, I write to congratulate you on the undertaking, wishing you health and happiness, and the JOURNAL and its editor, long life and prosperity. Now, Mr. Editor, after having made my bow and paid my compliments, shall I, hat in hand, retire and slip down and out? or shall I stay a moment and try and scrape a further acquaintance? But what shall I talk about? Filling teeth? Why, I don't know a dentist within a hundred miles but knows just all about that. Capping nerves? Easiest thing in the world: Cover them over with a little oxychloride of zinc, and in less than three months you have nine out of every ten *saved to death*. I know operators by the score who not only save all, or nearly all, exposed pulps, but even the minute portions of living tissue yet remaining in the roots, after the pulp proper is

dead. This very delicate operation, allow me to remark, is usually performed at some society meeting, and that little member, the tongue, used in accomplishing it. Shall I name mechanical (I beg your pardon, prosthetic is the word now,) dentistry? I blush for very shame. Why, hasn't every respectable dentist so much operating to do that he cannot give any attention to artificial dentures? After all, is it not noble to espouse the cause of the weak and oppressed? So what I have to say, let it be in reference to what is usually termed mechanical dentistry, and let me begin by making the assertion (and it is not to the credit of the profession) that we have made no advance in artificial dentures in the last fifteen or twenty years, unless it be in the number of unnatural, clumsy, unworkmanlike sets of teeth worn by the people. This is doubtless due largely to the fact that the best thought and manipulative skill of the profession have been devoted to operations upon the natural teeth. That this should stand first and foremost, all will admit; but we should not lose sight of the fact that there is always going to be a great demand for artificial dentistry. When the physician shall have so educated his patients in the laws of hygiene that they no longer cry for his physic, then, and not till then, can we expect our patients to so care for and preserve their natural teeth that they will not demand from us artificial substitutes.

This demand we should be able to supply, and give to our unfortunate patients something better than they get from the average dentist of to-day. Suppose I make the assertion that the manufacture of porcelain teeth has *advanced backward* in the twenty years last past. Whom do I aim to hit? Not the makers of teeth; their's is as a business, and they look upon it in a business light, and make for the dentist that which sells, and that which the greatest number of the profession demands. The sets of porcelain teeth in sections, now so largely used, and which are the admiration of the average dentist, I make free to assert, are no improvement, in any essential particular, over the single gum teeth made for gold plate work twenty years ago. These had this advantage, that we were able to set them with some degree of irregularity, corresponding to the natural teeth, which is not attainable with the stubborn section or block teeth. Attend some of our large dental meetings, and there you may probably meet

some one of real genius, with esthetic tastes and an artistic eye, who has made artificial dentures a study. He shows you a specimen of his skill; you admire his fine workmanship; the beautiful irregularity with which the teeth are mounted; but, perhaps, more than all, you admire the teeth themselves. You fail to recognize the molars of any of our leading makers. You ask whose make of teeth are these, and get the reply, "I had these made to order."

Nine-tenths of the artificial teeth exhibited and on sale in our leading dental depots, are of forms and shapes as if designed to be set in the mouth of the blushing maid of sweet sixteen. In passing, suppose I should hit rosy-cheeked Celluloid a slap in the face, who is going to cry out? Are those who have maligned and vilified the much-abused, filthy, poisonous old rubber going to come to the rescue? Is celluloid proving all that was claimed for it? I think not. It is open to these very serious objections. In one-half of the cases it discolours to an extent which makes it no more presentable than rubber as a gum color. It withdraws from the teeth, leaving an opening for the secretions and food to accumulate and become foul. After having been worn for any length of time, it is rather dangerous to allow it to rest; the mill must grind all the time or not at all. I have seen pieces that have lain out of the mouth for a few weeks so warped and changed in shape as to be no approximation to a fit. Worn in the mouth of a tobacco chewer or smoker, rubber is just lovely beside celluloid. But it has some good qualities, and for these I am glad to give it due credit. Not the least of these is its great strength. It holds the teeth very firmly, and I only hope that it may in time be so improved as not to be open to the objections named above. Unless this is done, I venture the prediction that when the claws of the Dental Vulcanite Company are loosened from the profession, celluloid will be quickly set down on, and first-class offices will again be found using vile rubber. Then let those who do use rubber use the black instead of the red, and let us hear no more of mercurial poisoning from wearing rubber plates. Black rubber is stronger than the red. The pigment used in giving the red or brownish color to the plate (said to amount to as much as twenty or thirty per cent.) weakens the plate very much. Why red rubber continues to be, or ever was, used, I hardly know; for I claim neither should ever be presented to view when worn in the mouth.

F. M.

BRIEF EXTRACTS FROM A PRIVATE LETTER.

FROM DR. N. W. WILLIAMS, GENEVA, SWITZERLAND.

THOUGH in the strictest possible sense a private letter, we propose to be so unfaithful as to take a few extracts from it, consoling ourselves that we are as safe from a drubbing as is the little bull with a strong fence between him and his antagonist, and soothing our conscience with the thought that Dr. W. deserves the treatment for not agreeing to write for us as a regular correspondent. Thinks he isn't competent! There's modesty for you, gone to seed. But, for the extracts:

NICE, France, January 31, 1881.

My Dear Friend:—I congratulate you on your elevation, once more, to the editorial chair. The great State of Ohio stands forth now in the front rank in political influence, and she contains many of the brightest lights in the dental profession; and it is right and proper that she should be well represented in dental literature. There is a want not yet fully supplied, and I feel sure that such a journal as you propose, and which you are so fully competent to conduct, will supply that want. And I hope, and feel sure that the good brethren of my much loved State will see to it, that it shall become a grand success. * * *

I would like to send you an article occasionally, when I have something that I think would interest the profession. I saw a case the other day which interested me very much, and I reported it to the *Cosmos*. It was a gold filling, in an upper molar tooth, in the mouth of "a fine old English gentleman," which had been made by Dr. Cartwright, in London, *fifty-seven years ago*. I believe it was some of the advocates of the "new departure" nonsense, that made the assertion that gold was the *worst* material with which to save teeth. Every dentist of much experience will agree to that if the work is *not well done*. But how silly a statement to make in the face of all the facts. Gold is a hard material to use in saving teeth; but when skillfully and honestly used, it will save more teeth than any other material yet discovered. But what is the use to make this statement, as no one doubts it but those who cannot use anything but the mastics. One has only to practice in Europe for a few years, where amalgams, and

all the other mastic fillings have been used in great abundance for the last hundred years, to discover the bad effect on the teeth of the nations. It does one good to get hold of a sweet, clean mouth of an American lady, with the teeth beautifully filled with gold, and well brushed, and clean. And then, immediately after, to have a mouth presented with the teeth all black with amalgam and a large crop of abscesses, and a most filthy condition of things generally—the contrast speaks for itself, and is most disheartening. I have no doubt that the “new departure” movement, so called, gave many a poor d—l, who had been ashamed to say he used amalgam, courage to go on with his plastering up cavities of decay. I do not think any more amalgam is used here than before, as the people had about all they could carry.

Yours sincerely,

N. W. WILLIAMS.

The above extracts show that the style of Dr. W. is fluent, and most beautifully *conversational*. When a man can write so that you imagine he is talking to you, as you read him, he has attained a most desirable gift. Dr. W. must not be too modest. He must write.—EDITOR.

ANN ARBOR, March 22, 1881.

Editor of Ohio State Journal:

Well, here I am at Ann Arbor. Have seen the Michigan University, visited the various buildings which comprise the great whole; enjoyed the pleasure of exploring the handsome grounds, and with others expect to take part in the commencement exercises of the dental department. While meeting old friends—talking over past and present—I miss one face, and think of an invalid at home who cannot participate in these good things, and am reminded of my promise that he should have at least a “pen picture” share of them.

Although I had formed no mean idea of this University, actual sight proved my conceptions of its magnitude to have been altogether inadequate, and that it is in truth a splendid monument of a State’s liberality.

The campus, an immense square of forty acres area, is laid out in landscape style. Maples, pines in variety, and many other shade trees being most judiciously and picturesquely grouped, and seemingly in a very flourishing condition. The sites of the eleven

buildings are well chosen; rendering the perspective good, and greatly enhancing the beauty of the whole.

"University Hall," the central structure, with a frontage of more than three hundred feet, presents a very imposing appearance. Here, are the scientific and literary schools. On the first floor, through the centre of the building, from front to rear, runs the main hall, seventeen feet in width, intersected with transverse halls leading to the wings. North of the main hall is a chapel which will comfortably seat five hundred and fifty persons. Four large recitation rooms, besides many others, devoted to various purposes, are also on this floor. In the front part of the second story is the grand auditorium, dimensions eighty by one hundred and twenty-eight feet, with a seating capacity of three thousand. In this great hall the commencements are held. The remainder of the building, which is four stories in height, is exclusively used for school purposes. The recently erected Museum, is a large and commodious structure, well adapted for its uses. It is in the Norman style of architecture, and is—as nearly as possible—fire-proof.

Of a less pretentious, but also handsome style, is the building occupied by the law school. Likewise those used for the medical schools, and chemical laboratory. The Dental College is a large and substantial edifice, part of which was originally a Professor's residence. To this, a two story wing has lately been added, which is sixty-five feet in length, by twenty-four in width. The upper floor is used for dental clinics, and the lower, as a laboratory. These new rooms are exceedingly well lighted and afford every possible facility in the way of appliances, etc., for thorough study of operative and mechanical dentistry. Recounting all this to you, may seem superfluous, but one is very apt to dot down first impressions, besides, some of the changes have probably been effected since you were last here.

The City of Ann Arbor, attractive even at this unfavorable season, must in summer be indeed, beautiful. The campus is sufficiently removed from its business part, to be entirely free from the attending noise and bustle. A charming quiet pervades its immediate surroundings, eminently conducive to study and thought.

While going through the monster chemical laboratory, and admiring its wonderful completeness, imagination placed you here

among all these conveniences and accessories for full experiment in your favorite science, and I thought how fully you would appreciate it all, and enjoy being an active worker here.

With renewed youth, one could not ask better advantages for the re-commencement of life's professional career, than are afforded by this Michigan University.

Young men, now entering our profession, and under the present favorable opportunities for securing a liberal education, at a comparatively small cost, will never be able to form any just idea of the difficulties attending similar efforts on the part of some of our honored pioneers, and the wide difference between the *then* and *now*.

MARCH 23.

The commencement of this year's class, is now among the things of the past, and thirty young Doctors of Dental Surgery are taking leave of friends, preparatory to the home going; or some perhaps are even now speeding on their way to future fields of usefulness.

The commencements of the law and dental schools, taking place on the same day, the graduating classes, by previous arrangement, agreed each to act as honorary escort to the other, to give more eclat to the several occasions; or perhaps to typify the good fellowship subsisting between the departments. All assembling at the appointed time, the dental students, preceded by music, headed the procession as escort, then the law students some seventy in number, followed by the faculty and Board of Regents of the University, marched to the great hall, where with appropriate exercises the degree of L. B. was conferred on each aspirant. After this came the address to the graduates, the subject being "The Administration of the Law, and its Ministers." It was most forcibly and eloquently handled, and elicited from the large audience, frequent applause.

The next in order, was a reception given by acting President Freese, at which the writer had the pleasure of meeting many agreeable and cultivated people.

In the afternoon the dental commencement took place. The order of march being reversed, and the young Bachelors of Law acting as escort to the dental graduates. After the degrees had been conferred, the valedictory followed. This was an unpretentious address, consisting of a retrospective glance at the history

of dentistry during the past century. Setting forth some of its prominent land marks, etc., etc., and closing with advisory suggestions to the young Doctors of Dental Surgery.

The opportunity of inspecting the specimen pieces of mechanical dentistry was given me, and I found them to be far above the usual average of first workmanship. They were all upper sets of teeth, mounted on rimmed metallic plates; some with single gum teeth, handsomely backed and soldered to the plate, and others with sections of teeth—made for rubber or celluloid work—cemented to the rimmed plate. Among them were three or four pieces of continuous gum work.

Glancing briefly over some of the theses presented—picked up at random—I was struck with their excellence. On the whole, they have in all respects been doing good work at Ann Arbor this winter, making it unlikely that any previous dental class has ever left the college better prepared for entrance into the profession, or with more promise as regards its future.

The names of the graduates are omitted for want of room. They numbered thirty.

DETROIT, March 24.

With Prof. Taft, left Ann Arbor last night for this place, to be present at the opening of the Michigan State Dental Association; which was called to order by Vice President Dr. Shattuck, who in the absence of Dr. Parker, of Grand Rapids, presided. At roll call, about twenty-five members responded. Ohio was represented by Drs. J. Taft, Harroun, and your humble servant. The morning session was consumed in routine and miscellaneous business. The afternoon showed a larger attendance, with Dr. Parker in the chair. As per programme the subjects of oral surgery and operative dentistry were announced, but nothing being offered, were passed and voluntary essays called for. Dr. Shattuck read a paper on "Cases in Practice." Dr. Metcalf, of Kalamazoo, offered the following preamble and resolutions, which were made the special order of the evening:

Whereas, The manufacture of artificial dentures has become so simplified that their construction is no longer properly any part of dental surgery, but in connection therewith tends to debase the profession; therefore it is hereby

Resolved, That instruction in the so-called mechanical dentistry should no longer be any part of the curriculum in the Dental Department of the University.

Resolved, That the President of this Association and the Board of Visitors to the Dental Department of the University are hereby instructed to make all proper efforts to have the Chair of Demonstrator of Mechanical Dentistry abolished.

The evening session was largely attended, the parlors of the Brunswick Hotel being filled to their utmost capacity. The offered resolutions provoked such lively discussion, and almost unanimous opposition, that their promulgator begged leave to withdraw them, which was willingly granted.

I wish here to say a few words in reference to this extraordinary motion by Dr. Metcalf. While giving him due credit for honest convictions as to its desirableness, I regret exceedingly that this should have emanated from so prominent a man in the profession. The separation of the operative and mechanical branches of dentistry is a question, which in my humble opinion had best be left to time to solve; and that *time* is not *yet*. We are not ready to ostracise this important branch of our profession, to dismiss it from our colleges, thereby losing in a great degree our power of its intelligent regulation, and giving it over to the mercy of every six weeks' laboratory pupil who may happen to open an office for its practice. Whether an educated dentist may or may not choose to engage in mounting artificial dentures, he certainly does not more than half understand his business, if he cannot skillfully regulate such a department in connection with, and as an adjunct to, his operating room. In fact, I cannot at present see the possibility of a division ever being advantageously made. Restoring lost facial or oral expression is an art—and by no means one of the least—and only the educated dentist, the thorough anatomist, can successfully do this. All which pertains to the art, must be *his*, whether or not he may perform the actual labor. Again, the medical profession will not grant to dentistry a recognition as a specialty of medicine. And why should we clamor for this? Why should we not rather stand upon and be judged by our professional merits? In the time to come, it is not impossible that the regular practitioners of general surgery, may add to the oral department, what is now understood as operative dentistry—combining the two as a specialty.

How this will profit us is to me by no means clear;—as it will only be depriving us of our better portion—and relegating dentistry to its former doubtful position, undoing the patient

and unwearied labor of those who have elevated it to its present status. Our profession is honorable in *each department*, and as a whole. Our better course would seem to be to so perfect ourselves in all appertaining to it, that we necessarily must add to its honor.

This is a subject upon which I feel deeply, and believing your sentiments coincident with mine, I offer no apology for the long digression.

The Michigan State Dental Association, although never incorporated, is an old society, but steps for the accomplishment of this end were taken during the late session. It is composed of a fine and able body of men, and has a promising future before it. We will hope that a large majority of its members will be so alive to the general interest of the profession, as earnestly to resist all attempts to cripple the dental department of their great University, of which they are so justly proud.

The morning session of the second day opened with a good attendance. Routine business was followed by an election of officers for the ensuing year, as follows:

President—A. T. Metcalf.

Vice-President—W. H. Dorrance.

Second Vice-President—F. W. Clawson.

Secretary—M. F. Finley.

Treasurer—Joseph Lathrop.

Censor—G. S. Shattuck.

J. B. McGregor was elected member of the University visiting committee.

After the disposal of a number of resolutions concerning the next meeting, which will be its quarter centennial, Prof. Taft addressed the Association on the subject of a law for the regulation of the practice of dentistry. The prolonged discussion which followed, led to the appointment of a standing committee on legislation.

Detroit is a charming city, a place one would desire to soon again visit. In what measure this is owing to the kind courtesy of the Michigan dentists, it would be hard to say, for they certainly did everything in their power to make the flying visit a delightful one. Although I do not, as a rule, believe in personalities, I must in this connection mention the name of Dr. Geo. L. Field, the prince of good fellows.

There are many other things of which I would like to write, but must bring this already unconscionably long letter to a close.

Very truly yours,

F. H. REHWINKEL.

Question and Answer.

"If you don't see what you want, ask for it." — BILL O'FARE.

Editor of Journal:

In that condition of the teeth spoken of as chemical abrasion or corrosion, is the abrading agent or corrodent recognized? And, if so, please tell us through the JOURNAL what it is. S. J.

ANSWER, BY THE EDITOR.

In various reports of remarks made by us at the meetings of dental societies, as well as in some of those made by Professor Cassidy, you might find your question answered. But, as in many other subjects, "line upon line" is required, we shall try, once more, to give an explanation of the destructive process to which your question refers.

Bear in mind that the teeth are composed of organic and inorganic matter. Sometimes the terms animal and mineral are used to designate these. We shall use the terms indiscriminately, without claiming that either pair of expressions is correct.

Lime is the chief inorganic constituent. It is a strong alkaline base, and, therefore, has a strong affinity for acids. Alkalies readily act on, and some of them dissolve organic tissues, similar to the organic matter of the tooth. But alkalies cannot dissolve the earthy material of the dental tissues. Compare carefully the appearance of things in chemical abrasion with that of any variety of caries. In the most common, and especially in black decay, a large amount of debris is left in the cavity. This shows that the chemical agents causing these varieties of decay cannot dissolve, or form soluble compounds with all the constituents of tooth substance. But in abrasion, the surface is left clear and clean, the organic and inorganic matter being removed to the same extent. Of course, this proves that the abrading agent forms soluble compounds with all tooth substance, otherwise debris would remain.

It also proves that the corrodent dissolves the two kinds of tooth material with about equal facility; for they are dissolved and washed away to exactly the same extent.

With these preliminary thoughts, you are ready for the statement that, of all known acids, but two have the necessary solvent properties and powers above described. These are lactic and acetic acids, and these have the power only when in their nascent state. (All the varieties of dental caries are produced by corrodents when nascent.)

Lactic acid is excreted in many mouths. Rheumatic, gouty and neuralgic patients nearly always have it. It is apt to be present in the mouth when the kidneys fail in their function. It is nearly always found in the mouths of tobacco chewers, its presence being probably due to the lactic fermentation of the saccharine matters used in preparing the tobacco.

Abrasion from acetic acid is generally found in the mouths of young persons. The source of the acid is to be looked for in the fermentation of farinaceous matter from the food, which is often left about the necks of the teeth. Hence, we often find the abrasion, in the class of patients mentioned, making depressions or furrows across the necks of the teeth; while the abrasion from lactic acid is more likely to be found on the grinding surfaces of the teeth.

Your question might have been answered simply by saying "Yes; lactic and acetic acids;" but it was supposed that an effort toward aiding you to reason the matter out yourself would be more satisfactory. Suffice it to say that careful chemical analysis gives the same answer thus reached by a process of reasoning.

Editor of Journal:

Is SECONDARY dentine, or that which fills the pulp cavities as age advances, equivalent to, or identical with, ordinary dentine?

A. M.

Will some of our subscribers or readers answer A. M. in our next number? The editor is not an expert with the microscope.—
EDITOR.

If some of our readers would be so kind as to help us in answering questions, we would be glad to see this department of

the JOURNAL fuller. Of course, we do not want trivial questions, such as any text book fully answers.

DIED, April 1st, at the home of his brother-in-law, in Cincinnati, Dr. SILAS D. PALMER, in the sixty-ninth year of his age. Though absent from home, he had no lack of friends and nursing. His wife, and we believe other members of his family, reached his bedside before his departure. In the death of Dr. P., the whole dental profession of the West will feel bereaved. His genial countenance and cordial manners will be missed, nor will full substitutes be found for them. His family have the deep sympathy of all his friends, and they are legion. We hope to have a more extended notice of him and his decease for our next number. The editor's acquaintance with Dr. P. covers a period of forty years—dating back to April, 1841; and in all these years he has always found him a man, in the manliest sense of the term.

Books and Pamphlets.

"I leave you here a little book."—JOHN RODGERS.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION at the 20th annual meeting, held at Boston, August, 1880. Geo. H. Cushing, M. S. Dean, E. T. Darby, Publication Committee. Trustees of S. S. White, Publishers.

This is a very handsome volume of 167 pages, gotten up in clear type, on good paper, and is, in general appearance, what might be expected from the committee and publishers. Its value is increased by a very complete table of contents. It contains the minutes, the papers read, the discussions, and a variety of miscellaneous matter, giving information of general and special interest to the profession. When we get more strength we shall notice some of the documents it contains, and some sentiments inculcated, unless we find material of more interest, or more easily prepared, with which to fill the JOURNAL.

We thank the Committee for the labor bestowed on it and for the copy sent us.

CARIES OF THE SUPERIOR MAXILLA: By TRUMAN W. BROPHY, M. D., D. D. S., Clinical Lecturer, etc., Rush Medical College, Chicago.

This is a four-page essay, reprinted from the Chicago *Medical Journal and Examiner*, and accompanied with illustrations. Clear reports of such cases are calculated to do much good. When a little more strength is regained, we shall give this one a careful and thorough examination; and we advise all who receive it to do likewise.

CARBOLIC ACID AND CREOSOTE: Their chemistry and therapeutical application to the practice of dentistry; by TRUMAN W. BROPHY, M. D., D. D. S., Clinical Lecturer on Dental and Oral Surgery, etc., Rush Medical College, Chicago.

This is a pamphlet, or essay, of four pages, republished from the transactions of the Illinois State Dental Society. It seems to discuss the articles named in a clear and scientific manner. Want of health, for the present, has prevented the close attention we intend to give it. We hope it will be very generally read by the profession. It lies in the direction of points where light is much needed.

UNIVERSITY OF CALIFORNIA. Dr. H. D. Cogswell's Endowment of a College of Dentistry, and a chair of moral and intellectual philosophy.

For this pamphlet we are indebted to our friend, Dr. W. H. Robinson, of Suisin, California. It gives a full and complete account of Dr. C.'s generous gift, as well as the organization of a college of dentistry. We hope the college will receive the patronage and encouragement appropriate to such a munificent donation.

REMARKS ON OUR DENTAL LITERATURE, made before the Odontographic Society of Pennsylvania, by L. Ashley Faught, D. D. S., Lecturer on Physiology in the Philadelphia Dental College, etc. Published by the Society.

Brief, clear and sharp in its treatment of the subject. Some may think that in places it attains to hyper-criticism; but a complete analysis of the subject, by any one, must step on the tender toes of some of us. Let it be carefully studied.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. I.

JUNE 15, 1881.

No. 3.

Contributions.

“Withholding facts is robbery.”—ORVILLE DEWEY.

CHOLERA INFANTUM.

BY GALEN, XENIA, OHIO.

THIS disease commonly affects children from three months to two years, and more, of age, and always in the heated term. Some instances are on record where the disease attacked children beyond the two years; in my own practice I have seen cases of the latter class; notably, those who were allowed to nurse up to this period. And it may be remarked in passing that these cases are always obstinate, and require careful management. Ordinarily the crowded city, with its alleys, inner courts and tenement houses, is the chief theatre of this scourge, but we find it in smaller towns, and even in the country.

The attack is usually ushered in by a diarrhœa, sometimes by vomiting and purging, one or the other, and often both.

In fatal cases, that run their course in a short time, the vomiting is nearly always continuous to the end. When the case is

prolonged to two, three, and often four, or more, weeks, the vomiting subsides, or ceases altogether, and the diarrhoea is left behind. When the attack is very violent, vomiting and purging nearly constant, the stomach rejects all food, even cold water. This stage of the disease is marked by great languor and distress, spasmodic pains in the stomach and bowels, and if relief is not soon obtained, prostration comes on, with cold and clammy skin, pallid, sunken features, half-closed eyes, dilated pupil, insensibility amounting to coma, and death in twenty-four hours to three or four days.

The attack is often attended with febrile symptoms in the protracted cases. In these cases the pulse is small, frequent, weak and corded, mouth hot, tongue furred, the surface of the body heated irregularly, extremities often cold while the trunk and head are heated to a preternatural degree that indicates the gravity of the case beyond a doubt. The pyrexia is generally intermittent, the exacerbations occurring in the evening. It is often accompanied by delirium, and a comatose condition.

The abdomen, though usually sunken or flat, is sometimes swollen and painful on pressure. In the progress of the disease, the patient emaciates rapidly, the flesh becomes flabby and soft, the features shrink, the eyes become sunken in the sockets, the surface is pallid, either cold and clammy, or dry and harsh. In the more advanced stages, various phenomena present themselves. The abdomen is sunken or tumid, the mouth aphthous, the tongue dry and covered by a brownish fur, or red and glossy, petechiæ are observed now and then upon the surface of the body, a vesicular eruption on the thorax, the skin is a dull, dirty, or leaden hue, the conjunctiva appears congested, the weakness extreme, the circulation much enfeebled, great restlessness, rolling from side to side with plaintive cries, coma sets in, and the scene is closed often by convulsions and hydrocephalic symptoms.

From the onset, the child usually sleeps, with the eyes more or less open; has thirst, fluids being swallowed with avidity; the appetite is capricious, sometimes entirely wanting, sometimes ravenous, often demanding unnatural articles of food.

The discharges are very various. At first the contents of the stomach and bowels, the matter vomited, is modified by the food frequently mingled with milk, which is generally coagulated.

After the discharge of the feculent matter, the dejections are

usually watery and copious, tinged with green, yellow or brown, and often are emerald green. Now and then may be observed hard or concrete matter, or semi-concrete matter, yellow, green, white, or gelatinous, and often tinged with blood. Again, slime, or mucus, comprises the greater part of the evacuations.

Farther in the progress of the disease, we have dark red dejections, resembling washings of flesh. The odor of the discharges is generally offensive, sour, putrid, and very rarely the healthy fecal smell.

When the disease has assumed the form of a lingering diarrhoea, some appetite is present, but very little digestion, the ingesta passing but little changed.

Dr. Dewees says the passing of live worms is unfavorable.

If the patient is attacked in the latter part of the summer, and the strength is not too much enfeebled, the temperature of the air lowered, and no return of relapse, the case may convalesce. The struggle is often one of time, the aim being to keep the enemy at bay till permanent cool weather. If the brain complications can be warded off, the prognosis is favorable, especially if the discharges return to a healthy condition. A regular appetite, diminution of the frequency of the evacuations, a general brightening of the countenance, and cessation of restlessness, are favorable prognostic signs.

Dr. Condie says if death occurs early, the mucous coat, and more or less hepatic congestion, are the morbid appearances.

In the *American Journal of Medical Science*, a writer observes that "there is undue development of the follicles, both of the stomach and intestines."

At a more advanced stage of the disease there is an indication of inflammation of the mucous membrane of the stomach and bowels, red patches, and ulceration both in large and small intestines. Livid spots are often observed by pathologists upon the stomach and duodenum. Dr. Horner saw pus in the colon in one case, and retained fecal matter in the large intestines. The liver is generally enlarged and more or less congested. The gall-bladder contains a liquid which is sometimes dark-green, and sometimes pale color.

The brain is often found in a congested state, with serous effusion in the ventricles, and thickening of the arachnoid. Dr. Lindsey found the bladder empty and contracted.

Dr. J. Lewis Smith found stomach healthy in some, while the intestines showed inflammation, the color being uniformly reddened and thickened ; others exhibited follicular ulceration.

MATTER—SPIRIT.

BY PROF. J. S. CASSIDY, COVINGTON, KY.

TO THOSE who try to realize the startling facts, and theories, advanced by Crookes in his recent experimental researches into what he terms "Radiant Matter," or the fourth condition, as apart from the already known conditions of solid, liquid, and gaseous, there is perhaps no more fascinating subject for serious, if not profitable, thought, than the possibly close relation between the non-material entity, called soul or spirit, and the physical nature of ultimate matter.

Scientists, as a class, have acquired the habit of ignoring, even though they may not deny, the probability of a supernatural existence. This sentiment of indifference, aside from want of faith in Divine Revelation, has been nourished through their inability to differentiate between the lower animal and human forms of life. The anatomist finds no distinction except in degree, in the mechanical arrangement of the various animal structures ; the physiologist sees corresponding functions performed by analogous organs ; and the chemist resolves every part of each representative of the animal kingdom into the same simple elements, proving that all alike are truly the offspring of "the dust of the earth."

Why, then, should man assume that *his* body is governed by an altogether different principle of life, from the vital force, which governs the bodies of his humbler brethren? who are unable to speak for themselves, and tell us why they, too, instinctively flee from danger, and like man, are universally disposed to avoid, or struggle against, the occasions which might cause their final dissolution? So far as scientific observation has reached in this direction, man is merely the highest type among living things, evolved from those beneath him, as they have been from those still lower in the scale of mortality, in accordance

with the accepted "survival of the fittest" in the long indefinite process of "natural selection."

With regard to the truth or falsity of the theories of so-called Darwinism, the writer has nothing to do, but even should we acknowledge the cardinal principle of evolution as true, we must still look in vain for a gradual mergence of any idea of futurity from the nearest connecting link, into the lowest general development found among the races of men. In this there appears an impassable gulf between the *genus homo* and all other forms of life, for however low in the scale of civilization any race of men may be, or however absurd their notions of right and wrong, we invariably find some evidence of their belief in a future life. With man, therefore, there must be an instinctive feeling that he shall in some form or other live again; and as we ascend the scale of intelligence, we find this feeling taking definite form in a belief in a personal Creator, whose Infinite Mind has implanted in man, and man only, the desire for a knowledge of eternal consciousness. But this faith, or rather hope, of mankind, say the scientific nihilists, is a myth evolved from the wonderful brain of Moses, the earliest and greatest of all ancient writers, and notwithstanding the apparently sincere truthfulness of the various stories of Revelation, there has never been a scientific demonstration that could possibly prove to us the supernatural presence of a soul. It is all theory.

Now, it is far from the writer's intention or ability, to offer a probiblical argument on this question; he nevertheless, cannot accept, as consistent, the tendency to unbelief which claims its denial solely on the ground that an hypothesis, dealing with an unknown force, and unsupported by practical illustration, is contrary to reason, especially in view of the fact that the infancy, youth and manhood of the Genius of Science have been nurtured by *theories*, some of them, although universally received, still unproven, and as unappreciable to the senses, as the wildest vagaries of Spiritualism.

The doctrine taught by Geber, and accepted by the Arabian alchemists, that matter was constituted of three elementary substances, namely: mercury, sulphur and arsenic, and that all the metals were made up of the first two, united in different proportions, was only theoretical: yet such philosophers as Roger Bacon, and Albertus Magnus, centuries afterward, regarded the

theory as true, and so believing, almost succeeded in erecting the methods and processes of the alchemy of their day into a true science. Basil Valentine and Paracelsus modified the theory of Geber by substituting salt in place of arsenic in the elemental group; the latter, however, while agreeing that all kinds of matter were reducible under one or other of these typical forms, assumed that there was an element common to these generic principles, an essence or quintessence of creation, in other words, but *one* real elementary matter—nobody knows what.

Such theorizing, although unaccompanied by experimental proof, greatly simplified the subsequent investigations into the nature of matter, establishing a systematic method of dealing with processes of composition and decomposition, each in accordance with the prevailing theory of the time. When, after the discovery of the greater number of the true elementary forms of matter as now recognized, it required a theory, furnished by Dalton, to explain satisfactorily the definite nature of chemical composition; that the primary forms of matter are constituted of indivisible particles, termed atoms, each atom having its own fixed and unchangeable weight; that compounds are produced by the union of a given number of atoms of one kind, with a given number of atoms of another kind; the compound molecule so produced, could unite with another compound molecule of different composition, and combination of the second order thus take place. The atomic theory was also supposed capable of explaining the manner in which one element took the place of another in combination, but the assumption that the substitution always took place atom for atom, or that the atomic weights of the elements were the same as their equivalent weights, was necessarily demolished by the theory, or law, of Ampere, which declares that equal volumes of all bodies in the gaseous state, contain the same number of molecules. Hence, it follows, that if the molecules of hydrogen and oxygen, for instance, are each diatomic, which is generally conceded as a fact, then equal volumes of these two gases would not only represent one molecule of each, but one atom of each also; and accordingly the molecular formula of water must be represented as containing two volumes—atoms—of hydrogen, and one volume—atom—of oxygen; the atom of oxygen having doubled its weight from that of the old notation.

Another rather farfetched dictum of chemical philosophy, is the "law of even numbers," which asserts that in every molecule containing one or more of a large class of elements, the sum of the atoms of such element or elements, must be an even number. This law and that of Ampere were doubted, even ridiculed at first, but are now received as certainly true, and considered as great aids in the determination of correct analysis, and as affording a key to the remarkable relation between the atomic weights of the several elements and their known capacities for heat.

There is no one any more who can call in question the probable truth of the various theories found in chemical philosophy; they are all obtained by scientific deduction with almost mathematical precision; but if we stop to consider any kind of matter, simple or compound, in its aggregate construction by molecules, the mind must certainly prepare itself for a belief in the truly marvelous; thus, the relative position of the several atoms, constituting a compound molecule, is of as much importance as their kind and number. The very first step in producing an organic substance by simple resolution of an inorganic molecule, accomplished by Wohler in changing ammonium cyanate into urea, ($\text{NH}_4\text{CNO}=\text{CH}_4\text{N}_2\text{O}$) proves this theory beyond all doubt, and with so-called simple matter a change in the number of atoms in each molecule, furnishes an explanation of the physical, and in many respects chemical differences, in masses of the same element, as for example, between ordinary oxygen and ozone, and also of the allotropism of carbon in the conditions of charcoal, graphite and diamond. Indeed, the impression of the marvelous must follow the full realization that such extremely simple causes can produce such wonderful effects and that while doubting the probability, one cannot utterly deny the possibility of Bombastes Paracelsus having builded wiser than he knew, in theorizing that all kinds of matter are constituted of only one simple form.

The cosmos of the Greeks is voiced more and more every year, in the augmenting numbers of thoughtful believers in the "unity of nature;" and although the writer cannot as yet conceive of "force" being "a unit in its mode of motion," he submits to the evidence which the *theory* has developed of the unity of method in the transmission thro' the same single media; for

instance: from the sun to our own planet, of the modifications of force, called gravitation, heat, light, sound(?), chemical action, magnetism and perhaps electricity, all being undoubtedly connected, and all being merely modes of motion. All natural effects result from motion; everything is in motion; the sun, stars, planets, molecules and atoms are in constant motion; how, we do not know. The theory has taught us to believe that no kind of matter exists really as it appears. Masses of matter are made up of molecules, and these of atoms; molecules may be considered as the minutest division of matter, inasmuch as individual atoms cannot remain free. A molecule is infinitely minute; compared to it the protoplasm of the *Torulae*, as described by Huxley, is as the Himalaya to an Indian mound. Every solid is the result of these almost infinite points, being arranged in a certain manner and sufficient in number to make an appreciable mass, but each in its own orbit, and separated from each other by a space so vast, compared to its own diameter, that the mind utterly fails to grasp the idea of the relative distance. As the attraction between the molecules is lessened and finally overcome by the temperature advancing still farther from the theoretical absolute zero of the solid, the successive conditions of liquid and gas occur.

It is with gases that Dr. Crookes has succeeded in demonstrating, by a series of magnificent experiments, the undoubted existence of a "fourth condition of matter," and it is not taking an iota from the grandeur of his researches to say, for he himself acknowledges, that Faraday more than sixty years before suggested on purely theoretical grounds, the probability of "radiant matter as far removed from vaporization as that is above fluidity." The Kinetic *theory* of gases has enabled Crookes to calculate that the mean free path of, or the distance between the molecules in air at the ordinary pressure, is the ten thousandth of a millimetre.

A gas enclosed in a vacuum tube represents free molecules, flying about in all directions, and with different velocities. As the pressure is being removed, the mean free path of each molecule is increased in length, and, therefore, each molecule is disposed more and more to move with greater velocity, and in a given direction. The direction is plainly observed by the induction spark. In a low vacuum, as is well known, the position of the positive pole is

most important, giving rise to an appearance of cloudy stratified luminosity; this disappears, however, in a high vacuum, the phenomena then depending entirely on the negative pole. Whether the negative pole points towards the positive, or in the opposite direction, the radiant matter is impelled all the same in a straight line from the negative. The cloudy luminosity of the residual gas observed in ordinary vacua, will follow, from the positive pole, the irregular angular bendings of a glass tube; but "radiant matter" in a vacuum approaching the millionth of an atmosphere, striking out from the negative pole, and whose impact on the glass, or other substance sensitive to its impression, evolves light, absolutely refuses to turn a corner. Heat is also developed whenever the motion of the radiant matter is arrested; even iridio-platinum, placed in the focus, glows with insupportable brilliancy, and finally melts.

But space will not permit a creditable outline of the many successful experiments of Dr. Crookes on this weirdlike subject; suffice it to say, that his discoveries may be regarded as furnishing the most extraordinary contribution to physical science. Witness the modest eloquence of the closing sentence of one of his lectures: "We have, in these researches, actually touched the border land where matter and force seem to merge into one another; the shadowy realm between the known and unknown, which for me has always had peculiar temptations. I venture to think that the greatest scientific problems of the future will find their solution in this border land, and even beyond; here, it seems to me, lie ultimate realities, subtle, far-reaching, wonderful."

Is it not reasonable to infer that inasmuch as there is a fourth, or ultra-gaseous, condition now recognized by all—though unwillingly by many—as actual matter, there may also be a point where matter merges into the "border land" of the immortal? The fact that there is a form of force not yet discernible, but acknowledged by scientists as being ever-present, is suggestive of the future possibilities which scientific deduction may accomplish in the unknown domain of spirit. If mind itself be merely a mode of motion, may not instruments of precision assist the rapidly developing science of Biology, or the yet gloomy field of Psychology, in illuminating beyond—aye, beyond!—the point where what we conceive as matter ceases to exist?

Let the demonstration be exclusively scientific, so that no one can doubt. Let it be true.

“Get but the truth once uttered,
And 'tis like
A star new-born that drops into its place,
And which, once circling in its placid round,
Not all the tumult of the earth can shake.”

ABOUT RICHMOND CROWNS.

BY J. A. ROBINSON, D. D. S., JACKSON, MICH.

Take platinum plate, rolled to 30 or 32 in thickness, and flow scraps of gold foil on one side of it, if you wish to give it a look of gold, and make the hoop of your crown of that, instead of gold. Now why? Because the platinum is stronger, and more easily adapted to a perfect fit round the root, and is not liable to melt in soldering, and will stand any amount of heat without changing form. Finish in the usual way, and you have a stronger crown than one of gold plate, and one that is less expensive.

To make amalgam crowns, not after the plan suggested by Dr. Richmond, take a No. 00 file, and take the *temper* out of it, so that it will bend easily round the neck of the tooth, and form a crib of the size and length wanted; place it round the neck of the tooth, and under the free margin of the gum; make it the right height, as you wish it to impinge on the grinding surface of the antagonizing tooth; spring it on to the root, and fill with amalgam, and let it remain for three or four days, or until the whole mass of amalgam is thoroughly hard. If necessary, put in steel screws, the size needed to fill the nerve cavity, for strength; and you will have an “amalgam crown,” when finished, that will be comfortably worn, and will do good service. Now, lest some of your readers should suspect this method was a sanction of the “New Departure,” I wish to state that I do not think it as good as the Richmond plan, or that, in suggesting this way of making a crown, I am advocating the common use of amalgam, in dental practice; but it is far better than tooth extraction, when

the roots are reasonably strong, and fit to have placed upon them any appliance to make them more useful.

To make gold solder, fit to solder gold for Richmond crowns, take equal parts, by weight, of copper, silver, and zinc; melt the silver and copper in a crucible, then add the zinc, in small pieces; and when the blue gas is blown off, caused by adding the zinc, pour off into an ingot, and call it *alloy*. To make gold solder from this alloy, take three parts gold, and one part alloy, and melt together, and it will make a solder that will not change color in the mouth. Neither will it burn when used in soldering, and will flow freely on gold plate fifteen carats fine.

ANÆSTHESIA—NITROUS OXIDE.

BY THE EDITOR.

MANY precautions are necessary to the proper administration of nitrous oxide. I take for granted that none now think of the filthy, poisonous method so earnestly condemned in our April number; or rather, that, like the writer, they think of it with such loathing that nothing could tempt them to resort to it.

Various inhalers have been devised, some of them useful and convenient, many of them quite otherwise. In the construction of inhalers, a few primary and essential principles must not be overlooked. Each is necessary to success, and when any one of them has been overlooked, the instrument should be rejected. The diameter of the instrument must be large enough for the passage of the breath as freely as if no device were used. The valves must be light and neatly hinged, so that the slightest perceptible pressure of the breath will open them, and they should be so placed that they will close with their own weight. The openings through them must be so large that they do not, in the least perceptible degree, retard respiration. This is, if possible, more important with the exit than with the inhalent valve. And right in this connection, it may be well to say that nothing must be allowed, in any way, to obstruct the expiration. Bear in mind that ordinarily the expiration is made in less time than the inspiration, and it will not be difficult to realize that the opening of the exit valve should be larger than that of the inhalent. Few

realize how easily the expiration is impaired. Perhaps only the victims of asthma, angina pectoris, or other conditions causing dyspnoea, can fully appreciate it. To sit facing a wall, at the distance of a yard, soon causes a strong feeling of suffocation with such persons. This is mentioned to impress on the reader the great importance of attention to the expiration. This, too, is as important with other anæsthetics as with nitrous oxide.

In administering the gas, the operator must be absolutely calm and self-possessed. It is unfortunate that he must ordinarily inhale a portion of the gas, after it has been exhaled by the patient, just as he must inhale the filthified smoke of his unmannerly comrade, who listlessly expresses hope that his cigar is not offensive. This inhalation of the expired gas makes it all the more difficult for the operator to feel composed; yet he must do it, or he can not control the patient. His calmness will react on the patient, aiding very much in the promotion of the desired composure and confidence on his part.

Let the process be briefly, yet clearly, explained to the patient, say nothing now as to how somebody else acted while under the influence of the gas, place the patient in an easy position, see that the limbs are not crossed, as such position becomes a source of fatigue, see that the clothing is not tight around chest or neck, place the inhaler between the teeth, and direct the patient to make a few deep prolonged inhalations of atmospheric air through it. The object of these full breaths of air need not be explained to the patient, but they familiarize him somewhat with the inhaler, and the mode of using it, give confidence that there will be no smothering or suffocation; but their main object is to thoroughly change the residual air in the air cells of the lungs. Let the anæsthetic be what it may, this preliminary, full, rapid breathing should not be overlooked or omitted.

In most cases the first few breaths of the gas greatly excite the respiratory function. On the part of the patient, there is a conscious feeling that something should be gotten out of the air cells, and this feeling is correct. The first few breaths greatly increase the proportion of carbonic acid in the expirations, and this excessive carbonic acid inclines to unnaturally forcible efforts to expel the residual air from the lungs. Also the deadly gas, carbonic oxide, is sometimes given off in the breath at this stage of the process; and it is so much more poisonous and deadly in its

effects than the carbonic acid, that its presence must be respected. The anæsthetic effort must not be pushed till all signs of disturbance of the respiration by its presence have abated. The inhaler should, therefore, be so constructed that the operator can easily and instantly touch the exhalent valve, and hold it open, so that the patient shall breathe atmospheric air. If the respiration is much disturbed, the valve should be kept open till it is perfectly tranquil; and after this the patient usually breathes the gas quietly, easily, and contentedly, to the stage of complete anæsthesia. But one objects that if you admit air after beginning the process, more gas is required than if it be rigidly excluded. This may be true, but we must do everything right, regardless of cost. It is a human body, filled with a soul, and possibly inhabited by God's Holy Spirit, we are working on, and this thought should drive away all feelings of false economy.

When the inhaler is first introduced, kindly direct the patient to close the lips around it, so that all the breath shall go through the instrument. Explain also that when half asleep or more, there may be a disposition to breathe through the nose, and that, therefore, you will place your hand in such a position, at the start, that with thumb and finger, if necessary, you can aid, by preventing this. But never think of fastening the nose by any clamp, or mechanical device; and never put any cork, or block, or prop of any kind, in the mouth to keep it open. The end of the inhaler between the front teeth is all that is necessary for such purpose, for when the gas is pure, and properly administered, the muscles that close the mouth are quite relaxed and pliable. To avoid bewildering the patient, who may be dreaming, it is well to have the forceps ready, that you may take hold promptly of the tooth to be extracted, just as the inhaler leaves the mouth. This suggestion to avoid confusing the patient is very important, and is the argument for placing the fingers in position to compress the nostrils, if necessary, while the patient is fully awake; for if postponed till the required time for action, the patient, dreamy and excited, possibly, is apt to think you are beginning to operate. It is the argument, as well, for having everything ready before the inhalation is begun.

When the gas is pure, and these directions are followed, that lividity, or blueness of complexion, so generally spoken of in the medical journals, will never be seen. And at the expense of

space, let an interview on the subject, with one of nature's noblemen and heroes, be given :

In November, 1866, the writer was met on Elm street, Cincinnati, by the late Professor George Mendenhall, M. D. Said he : " I have been unfavorably impressed with nitrous oxide ; but learning that you are pleased with it, I concluded that I needed more light." Dr. M. was Professor of Pathology and Therapeutics in the Ohio College of Dental Surgery, for years, and we had thus become intimately acquainted. He made an engagement and brought a delicate lady patient to have several teeth removed. The success was all that could be possibly desired, and after the operation, said he : " I took my little boy to a nitrous oxide office, and he inhaled the gas from a rubber bag, and became very dark in the face—as dark as if he had had an epileptic seizure. I didn't like it. When I saw the play of the valve now, and that the breath was not reinhaled, I expected to see less darkening, and intended to be satisfied if there were only half as much as in the other case. But as there is none at all, I am more than satisfied."

Another physician, and a professor in the oldest medical college in Ohio, was less confiding. He was family physician to Mrs. C., a beautiful widow lady of forty-five, who was dying with softening of the brain. The sons and daughter requested the writer to meet the professor in consultation at a certain hour. The professor did not come to time. The lady, quite demented, was crying with the pain of facial neuralgia. The mouth was examined, to find thirty-two sound, beautiful teeth therein, when, of course, the diagnosis was that the irritation, in advance of the softening, had reached the roots of the nerves supplying the parts, and, therefore, the only available treatment was to mitigate the pain till these roots should be destroyed by the progressing disease. According to the requirement of the code, a temporary prescription was made, which promptly arrested the pain. Returning homeward, it was convenient to call on the professor. He was as dignified as an iceberg ; but he was forced to talk, and was that much better than the berg. He soon stated that he did not consult with specialists ; and expressed surprise that a graduate of " Our College " would think of extracting healthy teeth to relieve pain of cerebral origin. " But who thinks of extracting such ? " said the writer. " Why, Mrs. C. told me she had sent for

you to extract all her teeth." "But she is insane, and not a competent witness," said the writer. "Well, I wouldn't give her chloroform, with that condition of the brain." "Nor I," said the writer. "Well, nitrous oxide is far worse," said the professor, "it turns the complexion as black as does an epileptic fit, and throws the patient into spasms that jerk him entirely out of the chair." "You are unfortunately not posted," said the writer, to which he replied: "But I am, though; B. and I went to see Mr. — give the gas, and the effect was just as I described." To this the writer replied: "You and B. went and saw Mr. — give to the patient his own breath and something else; you didn't know what, and Mr. — didn't know what; when, by going another direction, you could have seen a physician give pure nitrous oxide, with the patient as tranquil as a sleeping babe, throughout the operation; and this physician's membership in your college antedates both yours and B.'s, and he is as jealous of its reputation as either of you can be." This led to a long and friendly conversation on the subject, when the professor finally said: "Still I think Mrs. C.'s teeth need not be extracted," and the reply was, "Nor could I be induced to extract them." "Why, then, we agree!" said he. "Certainly," said the writer. "I didn't know you, and should have met you at Mrs. C.'s," was the close of the conversation.

This long digression is intended to set before our younger readers an illustration of the difficulties their predecessors have had to meet at every step, in gaining recognition for themselves and for this practice. Professional bigotry has been the biggest barrier all the time. That anæsthesia originated with the dental, and not with the medical profession, was a barrier to its introduction at the start; and as the re-introduction of nitrous oxide comes from the same source, it has all the old prejudice to contend with, in obtaining general recognition.

Let it be supposed that the gas was right, the patient has taken it calmly and patiently, and is thoroughly anæsthetized; the operator still needs his calmness and self-possession as much as at the first. He should take hold of and remove the tooth, or teeth, as calmly, and with as much care, as if the patient was wide awake. There is no excuse whatever for mangling and mutilating the gums unnecessarily. The methods of charging, adopted by some establishments that gave undivided attention to extraction,

tended to rapid and barbarous operating. The charge was a definite sum for the first tooth, and an additional lower sum for each tooth extracted before waking. The rate fixed made it necessary to extract rapidly, in order to make a reasonable profit. The writer once visited an office of this kind. The proprietor, or manager, had hired a recent graduate to do the extracting. The young man was trying to operate as he had been taught at college; but with each tooth the manager was shouting, "Go for it! go for it!" and the young man went for them, by cutting through gum, and alveolar process, and apparently with the approval of his employer. The victim afterward came to the writer for treatment of the mouth. His sufferings for two weeks were intense, and he lost a good situation on account of his illness caused by the mutilation described, which was quite uncalled for, and every way unnecessary.

Preparatory to using other anæsthetics, especially chloroform, it is quite common to give an alcoholic stimulant, a few minutes before beginning the inhalations. But it is quite unnecessary, and, indeed, bad practice with nitrous oxide. The patient is apt to be wildly delirious, or at least unmanageable. When alcohol is detected on the breath, the operation should be postponed, and the reason given.

As soon as the extraction is complete, the head should be tipped forward, to prevent the blood flowing back into the throat. Should it impinge on the epiglottis, disagreeable strangulations might ensue.

The patient, after taking the gas, is but slightly inclined to swallow, which is quite the reverse of the tendency after having taken chloroform. With the latter, the patient nearly always swallows blood; with the former seldom or never.

Should there be any faintness, serious prostration, or darkening of the complexion, after the operation, let the patient inhale aqua ammonia—not carbonate of ammonia, which is often substituted for the liquid, under the impression that the object is to stimulate the nerves of the nasal membrane, while the real aim is to neutralize the carbonic acid in the air cells of the lungs, for which the salt proves worthless, as its ammonia has already all of the acid it can take. And in cases of prostration, or with feeble patients, let the horizontal position be assumed as quickly as possible. But the horizontal position is less likely to be required

with nitrous oxide than with any other anæsthetic, as the gas is itself a stimulant, if not a tonic. Indeed, it is very remarkable how well it sustains the strength of the patient in some cases. The writer recalls a case in which he was personally interested, that is a good illustration of this principle. During an attack of typho-malarial fever, a large carbuncle formed on the neck, and remained till it became gangrenous at its base. Assisted by two strong men, he got into a carriage, and afterward up the stairway to his office. About five gallons of gas were inhaled, a crucial incision made through the tumors, and the several portions were dissected out, when, sustained for the time by the influence of the gas, he walked down the stairway, and got into the carriage without help, though on reaching home the debility had returned, so that it was necessary for his assistants to carry him into the house. It may be proper to mention that, in this case, though there was complete anæsthesia, there was at no time an approximation to unconsciousness. The physicians operating being wholly unfamiliar with the gas, the patient remained wide awake, and controlled the entire operation.

MAY.

BY J. A. ROBINSON, D. D. S.

OH, gentle, loving May !
 Why do you thus delay
 Your coming, and your bringing of the flowers ?
 Why make our hearts so sad,
 When we should be so glad
 To see the buds unfolding by your powers ?

Come and put forth the leaves
 On all the forest trees.
 So that the bird may shelter well its nest ;
 They can not bear to wait,
 (Since each has found a mate,)
 And need a home their loving hearts to rest.

Dispel the snowy shrouds
 That hide the soft, blue clouds,
 And send a chill to every human heart ;
 Come, with your bright, warm sun,
 And say that Spring's begun :
 And Summer will be here ere she depart.

Come, clothe the grass with green,
 Come with your bluest sheen,
 And fatten all the cattle on the hills ;
 The maples look so staid ;
 The squirrels are afraid
 To bring their young to play among the rills.

The hope of all the race
 Is in thy promised face :
 The ploughboy now his furrow has unfurled ;
 Send forth thy lightning strong,
 Thy thunders loud and long,
 Thy fire-works blazing from a distant world.

Then Summer's morn will dawn,
 And Autumn follow on,
 With all the fullness of her bounteous store ;
 And each succeeding year
 Will make the fruits appear,
 Till Heaven, Earth, and Time shall be no more.

Societies.

"Two are better than one."—SOLOMON.

IOWA STATE DENTAL SOCIETY.

President—G. W. Fuller, Des Moines.
Corresponding Secretary—A. O. Hunt, McGregor.
Recording Secretary and Treasurer—E. E. Hughes, Newton.

MICHIGAN STATE SOCIETY.

President—A. T. Metcalf, Kalamazoo.
Secretary—M. F. Finley, Ypsilanti.
Treasurer—Joseph Lathrop, Detroit.

ILLINOIS STATE DENTAL SOCIETY.

President—A. W. Harlan, Chicago.

Secretary—E. Noyes, Chicago.

Treasurer—E. C. Stone, Galesburg.

MISSOURI STATE DENTAL ASSOCIATION.

THE seventeenth annual meeting of the Missouri State Dental Association will be held at Sweet Springs, Saline county, Missouri, commencing on Tuesday, June 28, and continuing four days.

W. H. EAMES, Recording Secretary.

INDIANA STATE DENTAL SOCIETY.

THE next regular annual meeting of the Indiana State Dental Society will be held at Indianapolis, on Tuesday, June 28.

W. H. HALL, Secretary.

THE following is a circular issued by a special committee appointed to prepare a history of the Ohio College of Dental Surgery, and of each of its alumni. It is inserted here in hopes that it may be seen by some alumnus, overlooked by the committee :

CINCINNATI, April 25, 1881.

DEAR DOCTOR: At a meeting of the Alumni Association of the Ohio College of Dental Surgery, held March 3, 1881, a committee, consisting of five members of the Association, was appointed to prepare for publication a history of the college and of each alumnus, and such other matters as would be of interest to the Association.

The committee desire a complete history of the college from its organization; as complete as possible history of each alumnus, and biographical sketches of deceased alumni.

To this end the committee invite your attention to the enclosed list of questions, to which it is earnestly hoped you will take no exceptions and give a few minutes consideration at your

earliest convenience, and forward to the secretary, in order that the report may be as complete as possible.

N. S. HOFF, D. D. S., W. D. KEMPTON, M. D., D. D. S.,
GEO. WATT, M. D., D. D. S., C. I. KEELY, D. D. S.,

E. G. BETTY, D. D. S., *Secretary*,
126 W. 9th street, Cincinnati, O.

Name in full. Place and date of birth. What, if any, literary institutions did you attend? Where, when and with whom did you begin the study of dentistry? What other, if any, dental colleges did you attend? State the localities in which you have practiced, and your present location (give the time in each locality). Are you a graduate of medicine? (state where and when you graduated). Of what dental societies have you been a member? What positions of honor have you held in or out of the profession? What have you contributed to dental literature? Married or single? Can you give any facts concerning any deceased members of your class? Give any facts of interest concerning the college, its faculty or alumni, in your possession, not contained in the above questions.

SEVENTH (NEW YORK) DISTRICT DENTAL SOCIETY.

Editor of the Ohio State Journal of Dental Science.

During my visit at Rochester, New York, in April, and while attending the annual meeting of the Seventh District Dental Society of the State of New York, your valuable journal received many and deserved compliments, I can assure you, from quite a number of the best dentists of the society. Personally, permit me to compliment you upon the zeal and enterprise you have displayed in presenting to the dental profession so worthy a journal as the OHIO STATE JOURNAL OF DENTAL SCIENCE. I am sure every dentist throughout the length and breadth of this country ought to appreciate your efforts, and encourage you in your enterprise, not only in words of praise, but by subscribing for the JOURNAL, and the presentation of well written papers and items of interest.

As usual, the Seventh District Dental Society, of this State, met in annual sessions in the court house, in the city of Rochester, on April 26 and 27, and was called to order by the President, Dr.

F. French, of Rochester, who briefly addressed the society. A goodly number of members answered to roll call.

The usual reports of officers and committees were presented. The Committee of Ethics made a pleasing report, showing that the Code of Ethics had not been violated among the members during the past year. Three candidates presented themselves to the Board of Censors, for examination and membership to the society. The candidates passed a creditable examination, and were duly elected to membership.

Dr. B. R. McGregor, of Albion, read a paper entitled, "System." This paper was interesting, and in it the writer endeavored to impress upon the minds of the members, the necessity of systematic study of dental subjects, in order to make the society meetings more interesting. In order to bring about this result, the Doctor advocated the division of dental subjects into sections, with a chairman for each, and the various members to make their choice of one or more sections, under which they would work, and aid the chairman to present, at each annual meeting, a report upon his section. Arrangements were made whereby this plan could be put into active working order.

Mechanical Dentistry was opened for discussion, and elicited a lively debate, and numerous good ideas were drawn out to aid the younger members in their daily practice.

Under "Incidents of Office Practice," the devitalization of pulps, time and manner of their removal, and the filling of root canals, were subjects of considerable discussion. Arsenic seemed to meet with favor for the devitalization of pulps, the dead pulps to be removed thoroughly, with broaches, about the seventh or tenth day after the arsenic has been applied, though one or two members contended that forty-eight hours was a sufficient length of time to wait. As usual, some of the members are fortunate to have in their practice, and, I might add, have grown for them in their particular localities, such teeth as will permit them to approach the apex of every root with a broach, and remove every particle of dead pulp and then carry a few fibres of cotton saturated with creosote, to the end of each root. Upon the filling of roots there existed diverse opinions, though the prevailing ideas seemed to be in favor of some one of the cements or gutta percha.

The morning session of the second day of the convention was

well attended. Drs. A. P. Southwick and W. C. Barrett, Buffalo, of the Eighth District Society, attended this session.

Dr. W. C. Barrett favored the society by reading a paper entitled, "Therapeutics of the Skin." Great praise is due to Dr. Barrett for presenting such a well written and thoughtful paper. He, like many other readers of the *Dental Cosmos*, was attracted, some months since, to a question there asked for a remedy to counteract excessive sweating of the hands during operating, to which many dentists are subject. Dr. Barrett, with his usual ambition for investigation and research, set himself at work upon this subject; hence this paper, which, by the way, I am pleased to state, (so I'm informed) is to appear in the *Dental Cosmos*.

Dr. A. P. Burkhart, Dansville, read an essay entitled, "Non-adhesive and Cohesive Gold." The writer advocated the use of nonadhesive gold and hand pressure, claiming for this gold and this method of manipulation, superiority over cohesive gold and malleting. The essayist gave cohesive gold its due credit when used with discrimination. Close observation of a great deal of the work performed in the office of the doctor, by his predecessors, and work examined for some years past, which had been done by many of the very best operators in this country, showed that operations which had stood the longest and preserved the teeth best were those performed with nonadhesive gold, and hand pressure.

Dr. J. E. Line, Rochester, read an interesting paper, "Density of Enamel in Connection with the Devitalization of Pulps." This paper contained many useful and instructive ideas and suggestions, and was a subject of considerable discussion.

Before proceeding with the election of officers for the ensuing year, the president, Dr. French, announced that Dr. W. C. Barrett, Buffalo, would hold an interesting clinic at 2 P. M., at the dental depot of Davis & Leyden. Dr. Barrett, at the appointed hour, performed several vivisections upon dogs and cats, showing the effects of the different anæsthetics, namely, chloroform, ether and nitrous oxide, at various stages of anæsthesia. Much praise is due Dr. Barrett for this excellent clinic, and the event was one of deep interest to every dentist present.

The following officers were elected:

President—Geo. W. Tupp, Auburn.

Vice-President—B. F. La Selle, Rochester.

Secretary—J. S. Walter, Rochester.

Corresponding Secretary—A. P. Burkhart, Dansville.

Treasurer—J. Requa, Rochester.

Librarian—P. L. Stoddard, Prattsburg.

Censor for Five Years—R. H. Hofheintz, Rochester.

For some years past the annual meetings of the society have been held at Rochester, but the general sentiment seems to be in favor of not having any fixed place, and, in all probability, the next meeting will be held in Auburn.

Yours truly,

A. P. B.

Correspondence.

"I charge you that this epistle be read." — PAUL.

Editor of the Ohio State Journal of Dental Science.

The Illinois State Dental Society, during the last eight or ten years, has been trying to secure the passage of a law for the regulation of the practice of dentistry, or framed in the phraseology of the bill, "to secure the better education of dentists." But the matter has dragged through the Legislature year after year, without perceptible result. During the present session of our Legislature, however, the Chicago Dental Society sent a committee of three—Drs. Brophy, Harlan and Talbot—to Springfield to co-operate with the committee of the State Society. The gentlemen referred to set about their work with the determined energy of men who are bound to conquer success. It soon became apparent, however, that certain members of the State Dental Society were not over-anxious to work in conjunction with the committee of the Chicago Dental Society. But the gentlemen of the Chicago Society, with unrelaxed effort, persevered in the face of every obstacle. The bill was at first defeated both in the House and Senate, but, after weeks of well-directed effort, they succeeded in securing the passage of the law. The bill is, substantially, as follows: The Governor is to appoint a board of five dentists as examiners, before whom all those without a dental or medical degree, proposing to commence practice in the State after the passage of

the law, must come for examination. Those who hold diplomas from reputable dental colleges or from medical colleges, and have had experience in the practice of dentistry, are allowed to practice by registering these facts with the county clerk of the county in which they propose to practice.

It is hoped that this law will serve to induce young men designing to practice dentistry, to graduate either at dental or medical colleges before attempting to enter upon their practice in this State, and that Illinois will no longer be the asylum for quack-dentists, driven by just laws from other States. COSMOPOLITE.

The following is a full text of the law above referred to :

A BILL

For an Act to insure the better education of practitioners of dental surgery, and to regulate the practice of dentistry in the State of Illinois.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly*, That it shall be unlawful for any person who is not at the time of the passage of this act engaged in the practice of dentistry in this State to commence such practice, unless such person shall have received a diploma from the faculty of some reputable dental college, duly authorized by the laws of this State, or of some other of the United States, or by the laws of some foreign country, in which college or colleges there was at the time of the issue of such diploma annually delivered a full course of lectures and instructions in dental surgery: *Provided*, that any person removing into this State, who shall have been for a period of ten years prior to such removal, a practicing dentist, and, *Provided, also*, that any person holding the diploma of doctor of medicine from any reputable medical college, shall be entitled to practice dentistry in this State upon obtaining a license for the purpose as hereinafter provided; and nothing in this act shall be construed to prohibit any physician or surgeon from extracting teeth.

SEC. 2. A board of examiners, to consist of five practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members of said board shall be appointed by the Governor.

The term for which the members of said board shall hold their offices shall be five years, *except* that the members of the board first to be appointed under this act, shall hold their offices for the term of one, two, three, four and five years respectively, and until their successors shall be duly appointed.

In case of a vacancy occurring in said board, such vacancy shall be filled by the Governor.

SEC. 3. Said board shall choose one of its members president, and one the secretary thereof, and it shall meet at least once in each year, and as much oftener, and at such times and places, as it may deem necessary. A majority of said board shall at all times constitute a quorum, and the proceedings thereof shall at all reasonable times be open to public inspection.

SEC. 4. It shall be the duty of every person who is engaged in the practice

of dentistry in this State, within six months from the date of the passage of this act, to cause his or her name and residence or place of business to be registered with said board of examiners, who shall keep a book for that purpose; and every person who shall so register with said board as a practitioner of dentistry, may continue to practice the same as such, without incurring any of the liabilities or penalties provided in this act.

SEC. 5. No person whose name is not registered on the books of said board as a regular practitioner of dentistry, within the time prescribed in the preceding section, shall be permitted to practice dentistry in this State until such person shall have been duly examined by said board and regularly licensed in accordance with the provisions of this act.

SEC. 6. Any and all persons, who shall so desire, may appear before said board at any of its regular meetings and be examined with reference to their knowledge and skill in dental surgery, and if the examination of any such person or persons shall prove satisfactory to said board, the board of examiners shall issue to such persons, as they shall find from such examination to possess the requisite qualifications, a license to practice dentistry in accordance with the provisions of this act. But said board shall at all times issue a license to any regular graduate of any reputable dental college without examination, upon the payment by such graduate to the said board of a fee of one dollar. All licenses issued by said board shall be signed by the members thereof, and be attested by its president and secretary; and such license shall be *prima facie* evidence of the right of the holder to practice dentistry in the State of Illinois.

SEC. 7. Any member of said board may issue a temporary license to any applicant, upon the presentation by such applicant of the evidence of the necessary qualifications, to practice dentistry, and such temporary license shall remain in force until the next regular meeting of said board occurring after the date of such temporary license, and no longer.

SEC. 8. Any person who shall violate any of the provisions of this act, shall be liable to prosecution, before any court of competent jurisdiction, upon information or by indictment, and, upon conviction, may be fined not less than twenty-five dollars, nor more than fifty dollars, for each and every offense. All fines recovered under this act shall be paid into the common school fund of the county in which such conviction takes place.

SEC. 9. In order to provide the means for carrying out and maintaining the provisions of this act, the said board of examiners may charge each person applying to or appearing before them for examination for license to practice dentistry, a fee of two dollars, and out of the funds coming into the possession of the board from the fees so charged, the members of said board may receive as compensation the sum of five dollars for each day actually engaged in the duties of their office, and all legitimate and necessary expenses incurred in attending the meetings of said board. Said expenses shall be paid from the fees and penalties received by the board under the provisions of this act. And no part of the salary or other expenses of the board shall ever be paid out of the State Treasury. All moneys received in excess of said per diem allowance, and other expenses above provided for, shall be held by the secretary of said board as a special fund for meeting the expenses of said board, he giving such bond as the board shall from time to time direct. And said board shall make an annual report of its proceedings to the Governor, by the fifteenth of December of each year, together with an account of all moneys received and disbursed by them, pursuant to this act.

SEC. 10. Any person who shall be licensed by said board to practice dentistry shall cause his or her license to be registered with the county clerk of any county or counties in which such person may desire to engage in the practice of dentistry, and the county clerks of the several counties in this State shall charge for registering such license a fee of twenty-five cents for each registration.

Any failure, neglect or refusal on the part of any person holding such license to register the same with the county clerk, as above directed, for a period of six months, shall work a forfeiture of the license, and no license, when once forfeited, shall be restored, except upon the payment to the said board of examiners of the sum of twenty-five dollars, as a penalty for such neglect, failure or refusal.

Editor of the Ohio State Journal of Dental Science.

Dear Sir:—Chicago with its more than half a million of people, supports on the average about 150 dentists. And, as in other cities, some are professional and some are not. But the city, probably, has a greater number of really professional dentists than any other of its size. There is more brotherly feeling among the profession than is usually the case in more Eastern cities. Especially does the fraternal spirit exist among those that meet together the first Tuesday evening of each month.

The Chicago Dental Society is certainly an interesting body, made so by its members and by its good will to all mankind. At its last meeting the subject under discussion was an interesting one—The Absorption of the Roots of Permanent Teeth—dead and alive. Several cases were presented, and specimens of the remaining crowns, after absorption of the roots, were shown. It seemed to be the prevailing opinion of the meeting that this form of disease is becoming more common.

It was found, also, that to *ask* the questions, “From what cause?” and “Why more often?” was easier than to *answer* them. Specimens were shown where all the roots of the upper molars had been absorbed, leaving but the crown, and that partially hollowed out. The question arose, “If it was pressure that caused the deciduous roots to absorb, what causes the absorption of the permanent roots? Pressure?” (?)

The society has been working, in connection with the State Society, to get a State law regulating the practice of dentistry, but have not yet succeeded in getting the bill passed both houses.

Respectfully,

D. M. C.

CHICAGO, ILL., MAY 20, 1881.

Editor of the Ohio State Journal of Dental Science.

At the last annual meeting of the American Medical Association, which convened at Richmond, Va., on May 3d, 1881, an important advance step was taken by that body in establishing a section on dentistry. Among the dentists present were Dr. Jacob L. Williams, of Massachusetts, Dr. D. H. Goodwillie, of New York, D. C. Hawxhurst, of Michigan, Parmly, of Connecticut, E. S. Talbot, T. W. Brophy, and W. W. Allport, of Chicago. Others were expected and had promised to be present; but, influenced, no doubt, by the fear that the Association would turn a cold shoulder to the movement, they failed to put in an appearance.

During the first and second days of the session the matter was talked over by such prominent members of the profession as Professors Gross, of Philadelphia, Davis, of Chicago, Sayer, of New York, Dunster, of Ann Arbor, Stone, of St. Paul, and others. Without exception the suggestion met with most cordial approval, and all the assistance which they could render was generously proffered.

On the third morning of the session, just after the reading of the minutes, Professor Gross stepped upon the platform, and, in his usual impressive manner, moved for the suspension of the regular order of business, "with a view," as he said, "of offering an amendment to one of the by-laws, contemplating the formation of a new section to be known as the 'Section on Dentistry.'" In support of this amendment Professor Gross said: "When we consider, Mr. President, the value of Dentistry, and the fact that it is universally regarded as one of the necessities of civilized life, it is surprising that such a section was not established long ago. Dentistry is the oldest of all the specialties. It has been practiced from time immemorial, and in modern times has acquired a degree of importance not exceeded by any one branch of the healing art. There are at this moment not fewer than fourteen or fifteen dental colleges in the United States alone, and thousands of educated dentists in the enjoyment of a successful practice. Dentistry has a copious literature: many journals are published in its interest, and numerous associations attest the ties by which its members are cemented together. If these things be true — and I vouch for their accuracy — it is, it seems to me, eminently proper that this association should, without delay, form a section such as is contemplated by my motion. The association

has long had a section on ophthalmology, one on otology, and one on laryngology; and surely if these specialties are entitled to such a distinction it is not difficult to find reasons for placing dentistry upon a similar footing. Every man, woman and child in the civilized world requires the services of the dentist, whereas comparatively few persons require the services of the oculist, the aurist, or the laryngologist. The claims of dentistry, when properly practiced, to an elevated professional status, are everywhere recognized, while the social status of the dentist is steadily progressive. If dentistry was once simply an art, it is now an art and a science,—practiced in all enlightened communities by educated and refined men. I hope, therefore, that the sanction of the house will be given to my motion.”

Professor Sayer, of New York, also being upon the platform, arose and said: “This motion meets with my cordial approval, and I second it with all my heart.”

Professor Davis, of Chicago, also seconded the motion in the following very appropriate remarks:

“Oral or dental surgery is as much a legitimate department of medicine as ophthalmology, otology or gynecology, and as there are at present enough members of the Association who are practicing dentistry to commence a good section, I hope the proposition to create one will be cordially sustained by the Association. Its practical effect will be to increase the number of fully educated dentists, and by bringing them into closer relations with the great body of the profession, greatly advance the mutual interests of all parties.”

The motion being thus warmly urged by these veteran members of the profession, and ex-presidents of the Association, it was adopted without a dissenting vote.

On the fourth day, the Association designated Dr. Goodwillie, of New York, as chairman, and Dr. Brophy, of Chicago, as secretary of the section; but, in conformity with one of the by-laws, all work by the section is deferred for one year.

Thus it will be seen that the long hoped-for, but never expected recognition of the treatment of the teeth and the diseases incident thereto, as a special department in medical practice, has been established by the assembled representatives of the medical profession in the United States. And in the future, all practitioners of dental surgery holding a medical degree will, with

proper credentials, be admitted to membership in the American Medical Association upon an equal footing with the practitioners of any other department of medicine. Thus the year 1881 marks an important era in the history of dentistry.

Yours truly,

CHICAGO.

Editor of the Ohio State Journal of Dental Science.

An absence of five years from the annual meetings of that sterling old dental association, the Northern Ohio, while it may not betoken a too absorbing interest either in its doings or its welfare, has failed to produce in our case either an indifference as to its success as a society or to change the feeling of hearty personal interest in many of its members; and as we met the old familiar faces which greeted us twenty years ago, and listened to the kindly inquiries as to how Time had dealt with us in the past, we felt, for the moment, as though our grizzled beards and spectacled eyes were out of place entirely, and that we must be merely masquerading Rip Van Winkles—still young, but permitted to look forward twenty years. Twenty years! That is a long time in our profession, is it not, Mr. Editor? No wonder we feel old when we consider what has been accomplished in that comparatively brief period—methods, machinery, material, nearly all changed, much entirely new, and even where the same material remains, new forms, new instruments, and improved methods of manipulation, have succeeded and superseded the old. Twenty years ago associations, societies and conventions were in their infancy, and the grand impulses they have since imparted to the profession were just beginning to be felt throughout our own and neighboring States; but the topics then most earnestly discussed were not the topics of to-day. The cohesive property of gold, serrated points, contour filling, every detail of manipulative skill, were the all-absorbing topics. Clinics were becoming popular, and the greatest interest was manifested when skillful manipulators demonstrated the possibility, by the aid of the mallet (also new), to restore contours and build up crowns of gold. The subject of root filling had, perhaps, been broached, but little practical success had thus far followed its introduction; abscess was still generally believed to be an incurable condition, and the most advanced

treatment of exposed nerves was capping with gold or other material in a crude, and, in general, unsuccessful manner.

Gold and silver were just being exchanged for rubber and cheoplasty, and "section teeth" were still unknown. Purely manipulative ability too frequently usurped the place of knowledge, and he who with most ready skill could prepare an elegant and highly finished denture, or restore the contour of an incisor with gold, was the successful and envied man, even though his knowledge of the organs he was treating or replacing might be of the most limited degree, crude and superficial.

Thoughts like these passed through our mind as we listened to the discussions and noted, with pride and pleasure, the change both in the topics discussed and the knowledge shown of the organs under consideration. "Eruption and subsequent treatment of the deciduous teeth" came first on the list of subjects. Beginning with advice to the mother regarding the care of her own health, and suggestions as to the diet best calculated to nourish the teeth during the period of gestation—the disturbances frequently attending the eruption of the deciduous teeth, with proper treatment—the scrupulous regard for cleanliness which after their eruption should be observed, the causes of decay and the prevention, the best methods and materials for filling decaying deciduous teeth, treatment when pulp is exposed, also when abscess has supervened, and closing with an earnest appeal to preserve these teeth for the full period designed by Nature, and, if possible, with the pulp alive, and performing its functions, nourishing the tooth, and aiding the absorption of its roots as the crown of the permanent tooth rises beneath it.

Not one word during the entire session regarding rubber or license. The artificial teeth question being confined to the discussion and exhibition of several new methods of engrafting artificial crowns upon the roots of natural teeth, the prevailing idea being, apparently, that these methods were superior to others known in the past, and likely to come into general use.

There is one suggestion which might be offered to this, as well as other societies which we have attended, viz.: That the discussion of each topic on the list be preceded by the reading of a well considered paper upon that subject. By devoting the requisite time, such paper might be made tolerably exhaustive, and the discussion would be much less rambling and desultory.

For those associations which publish their transactions, such essays would be in themselves valuable, making the discussions more clear and intelligible than they would be otherwise. A selection both of topics and essayists for the ensuing meeting should be made at each regular meeting, to afford the necessary time for preparation. With this single suggestion, not intended by any means as a stricture, I close.

Faithfully yours,

W.

Editor of the Ohio State Journal of Dental Science.

Dear Sir:—Though not able to report the proceedings of either society, I nevertheless thought that the adjacent, and partly joint meetings of two of the prominent State societies, would interest you so much that even a little gossip in reference to them would be acceptable to you.

As you are doubtless aware, the Iowa State Dental Society held its May meeting this year in Davenport, while that of Illinois met in Rock Island, thus getting about as close together as possible, without one or both leaving their respective States. The Iowa Society thus held its nineteenth annual meeting the 9th, 10th and 11th of May; the other, its seventeenth annual meeting, the 10th, 11th, 12th and 13th of the same month.

The Iowa Society met at the Kimball house at 8 P. M., and in the absence of the President, was called to order by the chairman of the Executive Committee, Dr. W. O. Kulp, who named Dr. L. C. Ingersoll, of Keokuk, as temporary president. At first roll call twelve members were found present, and soon a half-dozen more, including the President, Dr. M. L. Jackson, arrived, their trains having been delayed. Almost an equal number of dentists were present as visitors. Dr. S. W. Heald, now pastor of the 14th street M. E. Church, but formerly a member of the State Society, extended, in behalf of the city, a hearty welcome to the Society; and he was, by formal motion, requested to participate in the proceedings. The Standing Committees for the meeting were:

EXECUTIVE COMMITTEE—Wm. O. Kulp, Davenport; L. C. Davenport, Davenport; A. S. Hodge, Maquoketa.

COMMITTEE ON MEMBERSHIP—T. K. Brewster, Oskaloosa; A. R. Begun, Cedar Falls; S. A. Garber, Tipton.

PUBLICATION COMMITTEE—E. E. Hughes, Newton; T. A. Hallett, Des Moines; R. S. Rathbone, Clinton.

COMMITTEE ON DENTAL LEGISLATION—I. P. Wilson, Burlington; J. T. Abbott, Manchester; Jos. Hardman, Muscatine.

COMMITTEE ON DENTAL DEPARTMENT OF STATE UNIVERSITY—N. H. Tullos, Iowa City; L. C. Ingersoll, Keokuk; A. G. Hunt, McGregor; Jos. S. Kulp, Muscatine.

The essayists and their subjects, were as follows:

1. A. V. Eaton, Anamosa, "Eclectic and Conservative Dentistry."
2. J. T. Abbott, Manchester, not assigned.
3. L. C. Ingersoll, Keokuk, "Alveolar Ulceration, distinguished from Abscesses."
4. Jos. S. Kulp, Muscatine, "Exposed Pulp."
5. A. O. Hunt, McGregor, "What we owe to our Society."
6. S. Arthur Garber, Tipton, "Artificial Dentistry."
7. W. P. Dickinson, Dubuque, "An Ideal."

Some ten or twelve new members joined the Society raising its membership to about seventy. The President of the Academy of Sciences extended to the Society an invitation to visit the institution, which was cordially accepted.

Dealers in dental materials were invited to close their rooms during the sessions of the Society, which was a good arrangement for all concerned.

Des Moines was selected as the place for the next meeting, and the essayists for next year were appointed as follows: L. C. Ingersoll, I. P. Wilson, J. Hardman, R. S. Rathbone, J. R. Townsend, A. O. Hunt, C. S. Fuller, E. E. Hughes.

The reading of the essays elicited close attention, and they were discussed with animation, that of Prof. Ingersoll being complimented by a request to re-read, at the visit from the Illinois Society. The title of this paper is: "Alveolar Ulceration distinguished from Alveolar Abscess."

A "question box" was used at this meeting, and its contents received a fair proportion of attention. President Jackson gave a very interesting address on retiring, and the President elect was duly installed. He announced the Standing Committees, the chairmen of which are L. C. Ingersoll, Executive Committee; Membership, W. P. Dickinson; Publication, E. E. Hughes; Dental Legislation, J. P. Wilson; Dental Department of State University, N. H. Tulloss. And after the usual resolutions of thanks, the Society adjourned to meet in Des Moines, the second Monday in May, 1882.

The Illinois Society was promptly called to order by the President, Dr. J. F. Marriner, of Ottawa, and prayer was offered

by Rev. J. S. McCord, of the First Methodist Church of this city. At first roll call thirty members were present. The Standing Committees for the meeting were as follows:

EXECUTIVE COMMITTEE—T. W. Brophy, Chicago; W. T. Magill, Rock Island; J. H. Hurtt, Peoria.

BOARD OF CENSORS—K. B. Davis, Springfield; M. S. Dean, Chicago; G. V. Black, Jacksonville.

PUBLICATION COMMITTEE—E. Noyes and E. O. Swan, Chicago.

COMMITTEE ON LEGISLATION—G. H. Cushing, Chicago; G. S. Miles, Jerseyville; K. B. Davis, Springfield.

COMMITTEE ON THE INFRACTION OF THE CODE OF ETHICS—J. N. Crouse, Chicago; W. W. Armsby, Geneva; A. W. Harlan, Chicago.

An address of welcome was made by the City Attorney, in which he heartily eulogized the profession in general, and the Illinois State Society in particular. To this address, Dr. Black, of Jacksonville, responded in behalf of the Society. Congratulations to the Iowa State Society, in session across the river, were extended by a special committee, composed of Drs. Dean and Mattison. In the afternoon the President delivered his annual address, and after some general discussions, the Society adjourned till morning to give members opportunity to attend the evening session of the Iowa Society. Wednesday forenoon was devoted to clinics, and the afternoon to miscellaneous business, election of members, essays, discussions, etc., and the evening session was spent in about the same manner.

The essays and essayists for the meeting, were as follows:

Treatment of teeth containing dead and dying pulps; also the treatment of alveolar abscess—Dr. H. H. Townsend, Pontiac.

Mechanical dentistry; its past and future—Dr. L. P. Haskell, Chicago.

The development of the enamel—Dr. M. S. Dean, Chicago.

Fractures of the inferior maxilla—Dr. T. L. Gilmer, Quincy.

Dental hygiene—Dr. W. P. Richards, Elgin.

The chemistry of mercury and its constitutional effects, resulting from the use of amalgam fillings and red rubber plates—Dr. E. S. Talbot, Chicago.

What must be the preparation for the successful practice of dentistry in the future?—Dr. C. A. Kitchen, Rockford.

Operative dentistry—Dr. G. S. Miles, Jerseyville.

Report on the saliva—Dr. C. W. Spaulding, St. Louis.

The essay of Dr. Gilmer was pointed, practical, and exhaustive, and was copiously illustrated by some forty colored drawings from the pencil of Dr. Black, of Jacksonville. Some of the members think this paper will be regarded hereafter as the authority on the subject of which it treats. The other essays were good, and attracted their full share of attention.

Thursday morning was devoted to clinics, setting forth the highest attainments in the several directions illustrated, among them Dr. W. N. Morrison, of St. Louis, extracted, filled and replanted a tooth; Dr. Call demonstrated his method of adjusting gold crowns on natural roots; Dr. Green, the use of non-cohesive gold; and in the afternoon an essay was read by Dr. Talbot on "The Chemistry of Mercury and its constitutional Effects, resulting from the use of Amalgam Fillings, and Red Rubber Plates." This paper elicited an animated and general discussion. We mention these things to let absentees know how much of science and progress they lose by their absence.

The officers elect were duly installed; the usual votes of thanks were had, and the Society, having held its best and largest meeting since its organization, adjourned to meet in Quincy, the second Tuesday in May, 1882.

Your publishers, Messrs. Ransom & Randolph, of the Toledo Dental Depot, had a full supply of goods and appliances on hand. Mr. Ransom, and their popular agent, Mr. J. E. Bodine, being present, to give personal attention to the wants of their friends. They seemed to be doing a good business, and a number of new subscribers for the JOURNAL were obtained.

Your friends, Drs. Templeton and French, of Pittsburgh, were present, and were elected honorary, or corresponding members. Also, Prof. J. Taft, the veteran editor and teacher, was on hand as he usually is, and so was another of your friends, a co-laborer in journalism, Prof. Spaulding, of St. Louis. Altogether, the meetings were a grand success.

If writing this shall awake interest, so as to increase the attendance next year, the writer will be amply repaid.

NEBO.

ROCK ISLAND, ILL., MAY 14, 1881.

WE have received a communication from Doctor Metcalf, of Kalamazoo, and also one from Dr. Ingersoll, of Keokuk, and one from "A Physician," which have to lie over, for want of room, but they will not spoil. Some brief notices, and many of our own specials, even though in type, suffer the same fate.—Ed.

Editor's Specials.

"Wisdom is better than weapons of war."—SOLOMON.

CHANGE OF DATE.

FROM this time forth our publishers propose to issue the JOURNAL at the beginning of the month, and not at the middle as heretofore. Hence the next number will bear the date of August 1st, instead of August 15th. Contributors and advertisers will please bear in mind this change. Matter for the printers should be received by us as early as July 5th, and still earlier would be better.

THE LONG DESIRED RECOGNITION.

DURING all these years it has been almost, or quite self evident that dentistry is a part of medical science. In its essential nature it could not be otherwise. Dentistry requires a knowledge of anatomy, physiology, pathology—but these are all medical sciences. Chemistry is a science common to all the professions and occupations in life, and it belongs alike, therefore, to medicine and dentistry. The dentist needs to understand the fundamental principles of civil engineering; but so does the general surgeon. The one cannot properly extract teeth, nor the other reduce dislocations without such knowledge. There is no science collateral to general surgery that is not collateral to dentistry.

Many dentists, with commendable industry and most admirable energy have been, for years, in search of recognition from the medical profession proper—such recognition as is now, but has not always been, given to surgery; and we are glad to say their research has been rewarded with the most emphatic success. And success is the most successful thing in the world.

At the late meeting of the American Medical Association, in Richmond, Virginia, the renowned surgeon, Prof. Gross, moved

that the rules be suspended that he might take the necessary steps to organize a section in Dentistry. The motion carried. Through a private letter from a highly distinguished dentist who was present, we learn that some preferred, as the name of the section, the term "Dentology," others "Dental and Oral Surgery;" but Dr. Gross adhered to the term DENTISTRY, and Dentistry it is. The objection to this term on the part of some, is that it recognizes mechanical as well as operative dentistry. But why should it not? Dentistry, as a profession, sprang into existence, recognizing the joint study and joint practice of these two departments, if they be two, which is doubtful; and there never was, and never would have been a dental *profession*, had they not been cultivated in unison; for their separate consideration had failed, from the dawn of science till the forenoon of the present century.

A young couple of ardent lovers are properly mated and married; but sometimes the surrounding circumstances develop the mental forces of the one, leaving the other *statu quo*. Now, we care not how much the man may be developed and fitted to shine in the higher walks of life, we have feelings only of contempt for him if he tries to show off where he cannot take with him the wife of his youth.

It has happened in dentistry that, in the last twenty-five years, more scientific thought has been bestowed on operative than on mechanical dentistry; and operative is seeking a divorce for want of compatibility, or because it is supposed that mechanical dentistry cannot shine in the society of physicians and surgeons. Shame on the man that does not see to it that his wife's social status keeps pace with his own.

But Dr. Gross was the very man to make the motion. His department is taken in as surgery—not as surgeology—with its splints, bandages, rollers and other traps, just as dentistry, and not dentology, is taken in with its plates, plaster, and appliances. And, after all, making a mortise in a piece of ivory, and manufacturing a block of gold to fit it, is more mechanical, less physiological, and less scientific than even the selection of teeth for Mr. and Mrs. Jones, to say nothing of their adaptation, which is to restore to the Joneses their natural expressions, or to make them seem as strangers to each other the remainder of their lives. The argument for divorcing the supposed different departments of dentistry has been the assumed impossibility of medical recognition for the

mechanical branch, if such there be, especially as it was claimed that all the cheap-John quackery pertained to that department, forgetting that in the nostrils of the true medical man the amalgam nuisances and amalgam quacks are a stench surpassing the other as far as the poodle is surpassed by the pole-cat.

Now that the American Medical Association has a section on DENTISTRY, thus recognizing us, let us recognize ourselves as dentists.

SHALL DENTAL SURGERY BE SUBDIVIDED?

LIKE our esteemed correspondent, Dr. F. H. Rehwinkel, we are sorry the resolutions proposing to further belittle and degrade the department of mechanical dentistry were introduced in a society so influential as the Michigan State Dental Society, and by a member so popular, in and out of the society, as is the author of the resolutions. It is true, a young man can learn to take impressions and boil rubber in a few weeks or months; but when he can do these, it does not follow that he can practice mechanical dentistry. The remedy lies in elevating, not in lowering, the standard and practice of the strictly mechanical department. In reality, filling a tooth with gold is as mechanical as is selecting and properly adapting a set of artificial teeth, so that the patient is benefitted to the fullest possible extent, while the friends, as well as the patient, are gratified to a like extent, at the becoming naturalness of the substitute. Utility and appearance must both be studied—utility with all the care, with all the philosophy and perseverance belonging to and manifested in the art and science of civil engineering,—appearance with all the patience, perseverance, skill, science and taste of the portrait painter. These requirements are not overdrawn, and they can not be acquired in a few months, by even the most talented and ingenious students in the land. And they call for and require as high a grade of knowledge, science and talent, as can be required by operative dentistry. It may be true, that the people do not yet require as high a standard of qualification in the mechanical, as in the operative department. But, if so, whose is the fault? Have a majority of our profession devoted as much time and effort to educate their patrons as to their wants and necessities in the

mechanical as in the operative department? Who but Drs. John Allen and Corydon Palmer have made famous their zeal in this direction? Hundreds are as zealous in the operative department as they are in the mechanical.

Now if by this careless, hap-hazard, slipshod treatment of this department, we have not, in a single generation, educated the masses till they can all discriminate between the man of science and the quack, shall we, coward-like, throw up the sponge, retire from the contest, and give over our unfortunate friends and neighbors to the merciless bungling of the cheap Johns and rubber-boilers? Shall we not, rather, gird on our armor anew, muster our forces into line, and charge the breastworks of ignorance and empiricism, by demonstrating the superiority of science and art, and thus, and by all other available means, bring the public mind up to a proper appreciation of what is needed, and may be obtained from dental surgery?

And even if it be true, as suggested by one of our correspondents in the April number of the *JOURNAL*, that in the last twenty years mechanical dentistry has retrograded, is that cause for discouragement, and a reason that science should ignore the wants and demands of society? All progress is made by pressure and rest. Men fret because the pendulum of progress vibrates. They would have it swing forever onward in the direction of the first impulse. At the return stroke they are discouraged, yet it is this that moves the hand a second forward on the dial-plate. As well might the young obstetrician fret because the maternal pains are not continuous, and because the birth recedes in the interval. A little boy saw two rams eyeing each other in angry mood, and he hoped to see a fight. "Ah! they've given it up," said he, "they're both backing out." But he lived to learn that the backing out of a ram was a good sign that something would be struck rather hard.

Members of society have rights that must be respected. For generations yet, the demand for artificial dentures will be very great. And, as a man or woman who has lost the natural teeth will live several years longer with a good artificial set than without, they must be made. These years of human life must not be sacrificed, even if it is somewhat disagreeable to compete with cheap-John-quacks. They have a right to artificial dentures, and a right to have them as nearly perfect as science and art can

make them ; and these rights rest, for their basis, on the fact that man is a social being—was made for society. They rest on the same basis with the right to “life, liberty and the pursuit of happiness.”

There may be a sense in which it is true that mechanical dentistry has retrograded ; but, in a higher and better sense, it has gone forward all the time. There are men in our profession to-day who can do better mechanical work than could be done by any, twenty years ago. If this is true, the science and art have not retrograded, whatever may be said of the characters of present practitioners. What would be thought of the surgeon who, because the people ran after traveling quacks and mountebanks, should propose to exclude amputations from the curriculum of study, and turn them over to wooden-leg manufacturers ?

In view of the age of dentistry as a profession, the advancement in popular education is remarkable. In many communities the people are better educated as to dental science than they are in medical or surgical. Let us thank God and take courage, and press on the good work of diffusing knowledge among the people, and the difficulty that suggested the resolutions will vanish. The resolutions were laid on the table. Let them be glued tightly to it. At all events, let nothing cripple the dental department of the great University or curtail its curriculum.

METHODS OF TEACHING.

LECTURES or recitations ? One study at a time or several ? These express some of the aspects in which thought presses for utterance when pointed in the direction of our heading.

In our public schools, and in other preparatory institutions, the recitative method is almost universal, while in professional schools or colleges the lecture system prevails. Just why all this is so, is not easily explained. It is evident that some of our preliminary studies cannot well be taught by lecture, and it is as evident that professional science can be imparted by the recitative mode. It seems, therefore, in width of range, to have the advantage. We believe it might be profitably used to a much greater extent, in professional colleges, than it is at present. The “quiz” may be classed as a modification of this method ;

and if it were practiced to a much greater extent, with practical remarks, in the shape of familiar conversation interspersed, with the full understanding that the student is at liberty to respectfully ask a question when the light has not shined clearly into the chambers of his mind, much more instruction would be gained in a given time than by the ordinary lecture course. Were this method in use, the teacher would always know whether or not he is understood, and the pupil would feel a confidence in relation to the attainment of accurate knowledge, clearly defined, greater than is now practicable. Should the dignity of social, fireside conversation be reached in the process, so much the better. In the audiences of the GREAT TEACHER, it would seem that any listener felt free to propose any question calculated to throw additional light on the subject under consideration, and respectful questions always received respectful and considerate attention. We are thoroughly convinced that the conversational is the true method of instruction. When the instructor understands his subject thoroughly, he will give such expression to his thoughts that there will be no danger of undue interruption, even when it is perfectly understood that the conversation is to be social and free. The pupils will so delight to listen, that they will have no inclination to interrupt unnecessarily. It is never difficult in such cases to find out who shall talk and who listen. While holding these sentiments we fully realize that the lecture system is much the easier for the teacher. There are, probably, fifty lecturers for each conversationalist worthy of the name.

But, how many studies at once? One, or several? Something can be said on both sides. One study at a time is likely to result in greater concentration of thought, but this method certainly taxes the brain to a greater extent. With but one study, a mental momentum is acquired which carries the pupil forward with great force; but the wear is on the same parts of the brain, and the effect may be compared to wagon wheels running directly after each other on a road,—they wear it into ruts, sometimes cutting through it. So the brain may be injured by the formation of mental ruts. The over-exerted portions of the brain may give way. Were it not for this danger, we should greatly favor the plan of single studies. In our own experience, we believe our attainments—the best ones, at least, are mainly due to the single system. We were as good a speller as at present, before reading

a word. This gave an ideal as to when any subsequent study was mastered. Unless our attainments reached the standard of that in our orthography, we regarded them as defective. But as this course is dangerous, it should be adopted with caution.

When the student reaches a professional college, it is usually presumed that the various studies in the curriculum have been already taught him, to some extent, by a private preceptor. His course now is, to a good extent, a review. Then it is well to take up a variety, whether the recitative or lecture system is adopted.

But, from the primary school to the close of the professional course, we believe the tendency is too great variety. The true idea of education seems to be ignored. To educate is to *lead out* the mind to investigation. The popular idea seems to be to *cram in*, till the brain and mental faculties are surfeited.

THE HEALTH IMPAIRED BY DISEASED TEETH.

FROM experience and observation we are inclined to think that neither physicians nor dentists give this subject the attention it deserves. That toothache breaks the patient's rest and impairs his appetite, for the time, and that his vital force is thereby lessened, is well recognized. That a mouth inflamed and uncomfortable interferes with the nutritive functions is also admitted. That babes often suffer in first dentition is well known. That a toothless patient, or one whose dental organs are so defective that he can not properly masticate his food, is likely to suffer from indigestion, is fully realized.

But such are by no means the worst cases met. Often the most serious consequences result from conditions of the mouth which cause but little local suffering. A description of a few cases from actual practice, taken almost at random, may convey our idea more clearly than a verbal definition of the pathological conditions involved.

Mr. A., aged about 22, became nervous, restless, slept badly, lost appetite, and, in consequence, became debilitated. After a few weeks of such suffering, some of his muscles became more or less rigid; very severe neuralgic pains pervaded almost his entire system. General tonic spasms supervened, and he lay for

weeks rigid, and almost motionless. Several physicians were called in council. Various means were used to relax the spasms, and to mitigate his sufferings. Fortunately, alveolar abscess, at length, called attention to the state of his teeth. These were found much decayed and badly diseased. It was decided that they should be extracted; and after their removal recovery was rapid, without other special treatment. This case occurred in 1846, and was closely observed throughout by the writer, who was one of the consulting physicians.

Miss C., aged 41, suffered for years with general and severe neuralgic pains. When first seen by the writer, she had been confined to the house over two years, mostly in a darkened room. Her mouth was full of teeth decayed, broken, with abscess at the roots of some of them, and exostosis on others. The fifth pair of nerves were, most of the time, exempt from pain; and as, in the early stages of the trouble, the severest distress was in the pelvic regions, her physicians were deceived in their diagnosis. The writer was called in council, and advised the extraction of all her teeth. To this her physicians objected, on account of her extreme debility, and because they were firmly persuaded the source of trouble was to be found in the pelvic organs. The disagreement was duly reported to the family, and the writer returned home. About two weeks later he was again sent for, and the teeth were removed as rapidly as was prudent. In about two months she resumed charge of her father's house, which she and he had left on account of her illness. She became quite healthy and vigorous, without special treatment other than the introduction of an upper and lower denture, furnished by her family dentist. This case occurred in 1851. Ten years afterward she was in good health, and had remained free from neuralgic pains.

Mr. S., aged 53, though naturally of good constitution, declined in health for several years. His nervous system became so much involved that his family feared insanity. A grain thresher and separator, on an adjoining farm, so excited his nerves that convulsions resulted, making it necessary to deaden the sound by suspending blankets, etc., as a lining to his bedroom. Soon after this, he had sixteen diseased teeth and roots extracted. This left his mouth clear of dental organs. Without other treatment his health rapidly improved, and in a few months, when

his own wheat was threshed, within a hundred yards of his house, he felt no annoyance, but visited the barn to see how the work was progressing. This was in 1873, and to-day we saw him at work, laying out a ditch, on a farm which he has lately purchased. In 1873 he had no hope of regaining his health, or of living till the end of the year. He has been a prosperous, energetic business man since a few months after the operation.

Mrs. J., aged 33, suffered unspeakable agonies, at first in the regions supplied by the fifth pair of nerves, but afterward throughout the entire system. She had been confined to the house for several years, when the writer first saw her. Not many of her teeth were badly decayed, but all, except two, were affected with hypertrophy of the cementum—exostosis. They were extracted, very reluctantly, at first, and with great difficulty. Her health was promptly restored; she re-entered society, resumed the care of her house and family; gained over thirty pounds in weight in the first four months after the operation, and all this without additional treatment.

And thus might we go on, detailing case after case, till we had filled a number of the *JOURNAL*; but, if these do not suffice in this direction, we shall feel discouraged. We found a young married woman and her mother crying about a supposed cancer in the younger woman's breast, when the whole trouble was caused by a lower third molar.

DISGUIISING THE TASTE OF EPSOM SALTS.

WHEN there is engorgement of the antrum, or alveolar abscess is threatened, a cooling laxative, or saline cathartic, often works wonders. By draining the mucous membrane of the stomach and bowels, vascular pressure is much relieved. Many an abscess may be prevented, and congestion may be relieved before inflammation is reached, by prompt action in this direction. And we know of no medicinal agent that better fulfills the indications than the salt above named, which is the sulphate of magnesia. We presume it would be oftener prescribed by dentists, and taken by their patients, were it not that its taste is most intensely disagreeable. Various expedients have been resorted to,

in efforts to disguise its taste. We have found sour milk useful in our own experience, but it is claimed that the disagreeable taste can be completely masked by using the smallest possible quantity of water in dissolving the salt, and then adding to the solution a few drops of essence of mint. The claim is that the mint thoroughly masks the offensive taste where the quantity of the dissolving vehicle is small, as above suggested. We fail to give credit for the idea, for we have forgotten its source, while retaining it in our memory. This salt, in common with others similar, gives better cathartic results when dissolved in a large volume of water. This, however, is no objection to the suggestion made above; for it is an easy matter to drink water freely immediately after taking the prescription, which practically accomplishes the end desired.

The practical suggestion now made is more important than would appear at first sight. The bond of sympathy between the head and the rectum is very strong. A rectum impacted with feculent material insures a determination of blood to the head, and adjacent parts. This determination may progress to congestion, and end in inflammation. If we can prevent these by an inoffensive saline cathartic, it is well to know it.

MIXTURE OF OPINIONS.

IN addition to the very complimentary notices of the JOURNAL in our various exchanges, we receive many private letters which show a very great variety of opinions as to its future career and success. There seems to be but one feeling as to the character of our venture, as far as we have gone already. But there appears to be a misgiving about our ability to hold up to the standard we have set in the first and second numbers. Such a proportion of original matter—all but three pages in the first and all in the second—seems to be a stumbling block. We think a fair understanding of the facts will settle the minds of the doubters, and console the disconsolate. An explanation here leads unpleasantly into personal and selfish lines of thought, which, in view of the circumstances, we hope will be forgiven.

And first, as to the publishers,—they have no disposition to go backward, as to mechanical execution, or promptness of issue.

Nor will they cease to stand by the editor in every way that they can render his labors more efficient, and less irksome to him. The publishers can be relied on. They have the energy and ambition called for by such a venture. They went into it deliberately, and with full intention to succeed, and they are succeeding.

And as to the editor: He was never in better condition for editorial work. At no time has the brain suffered, in the chronic trouble, except for want of oxygenated blood. Four to six breaths a minute failed to supply it. But now that the respiration has reached twelve to sixteen, we write with more ease and less hesitancy than ever before. We claim nothing for the composition or rhetoric in the *JOURNAL*, as it has appeared,—it is before our readers; but such as it is, it was all written without hesitating for a single word, and the copy reached the publishers without erasure or interlineation. With these, added to the fact that we are not able to work at the chair, the reader will see, in the capacity and leisure, a promise of results in the future numbers at least equal to those in the past. It is not our purpose, however, to be entirely original. We see many things we should like to compile, and have a number of such on hand that have been thus far crowded out.

An esteemed professional brother, and an able writer, suggests to the publishers that, as they are situated at a distance from the best writers on dental matters, they will have difficulty in getting up a first-class journal. Now we are at a loss to know where the best writers on dental matters reside,—probably in Nova Zembla, for we are sure that as good dental writers as can be found in this country are within easy access of the *JOURNAL*. And we trust, as our enterprising publishers have furnished them an appropriate medium, they will demonstrate their superiority by contributing to its pages, instead of allowing their modesty to keep them in the background, while the profession depends, for its periodical literature, on rehashed articles, and stereotyped thoughts, running in professional ruts from year to year. This does not apply to all, but to far too much that passes for current literature. It is well known to all close observers that the best things written for our periodicals have been produced by men who can very easily communicate with the *JOURNAL*. The best writers we have do not write much. If the *JOURNAL* can be instrumental in calling them out to a more frequent use of their

pens, it will be entitled to the thanks of the whole profession. To do this is a prominent aim with both publishers and editor, and we are much gratified that, already, we are having a good degree of success, in what is done, and especially in that which is promised.

FUNNY? WELL, TOLERABLY.

FROM the dawn of science and the introduction of letters till the present time, nothing else has been written, or printed, conceived, or thought of, so overwhelmingly funny as the report on Dental Literature and Nomenclature, at the meeting of the American Dental Association in 1880. The tendency of this report is to greatly elevate the standing of our profession, for if it is adopted, and it is to be understood and used, the course of dental study will surpass in degree, and in the time required to master it, the *curriculi* of medicine, law, theology, literature, and politics, with Chinese, Choctaw, and legerdemain added. The document is absolutely amazing, and is deeper than anything known or unknown, except the bottomless pit.

But a saddening and depressing thought is already whispered. In these degenerate days of human depravity, the tongue of slander is loosened at both ends. The charge of plagiarism is boldly and basely made in reference to everything profound and beautiful in prose or poetry. "Woodman! Spare That Tree;" was the standard poem of our boyhood's taste. With it were all others compared, and awarded merit or demerit accordingly. And now, because at an earlier date, some one requested that a certain tree might stand, at least another year, to be dug about and manured, the "Woodman" fellow is charged with literary theft, in stealing the idea on which his poem is founded. So of Owen Meredith's beautiful "Novel in Rhyme," called "Lucile." It has been whispered that it, too, is stolen. But we believe no such claptrap. Great minds agree naturally. Equals in power, equals in thought, should be regarded as an aphorism in mental philosophy. So, too, of this report. It has been insinuated that it is taken from the writings of the renowned, ancient philosopher, Blynx. But the similarity of expression shows only another case of mental parallelism. Blynx was capable of writing

such a report, and would have done it, no doubt, had dental societies existed in his day. Blynx, the ancient and renowned, was a Nazarite from his mother's womb. No razor ever came upon his head. He spake from the exhaustless fountain of knowledge which welled up within him. He spake as the angels dictated, and the Spirit gave him utterance. He opened the top of his head, that the true light from Heaven might shine in, and be disseminated through him, to enlighten "1. Albo," by "2. Wato," for "3. Hobodo," by means of "1. Substantivoids," "2. Adjectivoids," "3. Connectives, or Relationoids."

But that all suspicion of plagiarism may be dispelled, compare a brief paragraph of the report with one of similar length from the writings of Blynx.

The report, (on "Dental Literature and Nomenclature," remember,) says:—"But the essential part of every verb is this copula (*is, was, were, will be*, etc.) *is*, or some other part of the verb *to be*, and this is known as the *substantive verb*, because it embodies the idea of *being*, which is also the character of the substantive. The verb is thus, therefore, from another point of view, a substantive (instead of being an adjective.) Finally, the verb *to be* (really the only verb) is neither substantive nor adjective, but a peculiar kind of connective (or copula), joining the substantive and adjective in a proposition, as JOHN IS SICK, and hence, it is a relationoid, or a word of relation. So that from the third point of view, it may be rightly and tersely said that *there is but one verb, and that one is a conjunction*.

Now, if dental science had developed during the days of Blynx, doubtless a specimen from his writings might be found that would fully illustrate the mental parallelism alluded to above. But let us take a short extract from his report on cavalry horses made to His Royal Highness, Morasticorlander the Great, Emperor of Gynecogelyrium. On page 1171, Bagdad edition, Blynx says, "The special point of every horse is his go (roll, walk, trot, pace, gallop, etc.,) WENT, or some other portion of the verb *to go*; and this is known as the progressive verb, because it embodies the idea of *git-thar*, which is also the tendency of the progress. The horse is thus, therefore, from another point of view, an ox (instead of being an ass). Finally, the verb *to go* (really the only verb) is neither related to oxen or asses, but a peculiar kind of capricornum, joining the ox and the ass in a

possible team, and hence they are relationoids, so that from this third point of view it may be righteously and truly said, there is but one horse, and he's a mule.

Now, if the indulgent reader will forgive us for writing this, we shall forgive him for listening, last summer, to the Report on Dental Literature and Nomenclature, at the meeting of the American Dental Association, but always with this proviso, that he must not do it again, unless from stern necessity.

But, after all, there is this redeeming feature: the man who works on such report, year by year, is not doing anything worse. We knew a man, slightly deranged, who could be kept quiet and docile, months at a time, simply by furnishing him tools and timber to construct a "perpetual motion."

NOT DEAD.

IN the lonely years of the past, in which we were practically dead to the public, we pressed those of our professional brethren who visited us, with manifold questions in reference to members of our profession whom we had failed to see for a long time. News items thus gathered were not always reliable, and in one respect we are glad; for two of our esteemed friends, whom we had long regarded as gone to the other shore are still with us, alive and in practice. We allude to our friends of the olden time, Drs. White and Beale. We are so glad they are alive, and, as we have been reported dead several times, we know how to sympathize with them, and trust they will forgive our misstatement. For the information that they are alive, we thank the *Dental Cosmos*; and, while our pen is in, let us thank it for its kindly manner in noticing the JOURNAL.

HOT AIR SYRINGE.

THIS little instrument, which we suppose is now in almost every dental office, has had a varied experience. Though told before, we propose again to tell something of its history. It originated in this way:—In May, 1855, the old, original American Dental Society met in Cincinnati. Dr. Elisha Townsend, of

Philadelphia, Dr. Wheeler, of Murfreesborough, Tennessee, Dr. S. S. White, and the writer, by invitation, spent the evening at the residence of Dr. J. M. Brown. While the ladies were absent from the parlor, the subject of drying cavities was taken up. With all his enthusiastic energy, Dr. T. sprang to his feet and said, "I'll pay a fortune to the man that will teach me how to make a cavity dry. I don't mean how to dip most of the water out of it; but when I say dry, I mean *dry*. I wish to show the profession what a badly shaped cavity I can fill if it is only dry." The writer of this replied, "That will be easy, Doctor, — throw a current of warm air into it." "That will do it, certainly," said Dr. T., "but where's your instrument?" "I shall make it when I return home," said the writer. The result was that, with advice and suggestions from Dr. Taft, the instrument was promptly made, and was found efficient entirely beyond our most sanguine expectations.

This first instrument went into the possession of Dr. John B. Rich, of New York, in 1856, and as an historical relic, we are endeavoring to regain it, or any part of it that may be in existence.

In structure, this instrument was, in several respects, unlike those made at present. Its nozzle was of platinum, with orifice the size of a cambric needle. The cylinder, for heating the air, was of thick metal, and was filled with rods of iron wire tightly wedged in. The shaft was of thin metal, and the rubber ball, (the bellows), had an eyelet in a position to be easily closed with the thumb. (The platinum point had been misplaced, and a silver one was temporarily in use when Dr. R. got it). The cylinder retained heat much longer than those in the instruments now made, and the cuticle could be burned to a blister, or even to a crisp, and the dentine burned to absolute whiteness, by the warm current, when the cylinder could be held with the thumb and finger. No heat was wasted by being drawn into the bellows, or bulb.

It was our habit, at that early day, to burn too sensitive dentine with the hot air propelled through this instrument, which was a very neat process, compared with the hot ashes and other expedients since recommended for the same purpose. Of course, the clumsy pointed instruments of the present day are not adapted to such delicate work; and the waste of heat, caused by drawing

the air back into the bulb, would tend to make them still more inefficient for this purpose.

This instrument was described, and illustrated by a wood-cut, in Jno. T. Toland's catalogue, and afterward, by description and the cut, the attention of the profession was called to it in the first edition of *Taft's Operative Dentistry*. The cut, however, was taken from the instrument, as modified by Mr. Sherwood, the modifications being other than improvements.

The instrument went into almost total disuse; but the introduction of the rubber dam recalled it from obscurity. As it became practicable to keep the cavity dry, it became desirable to be able to make it perfectly dry, and hence a dentist is regarded as but partly equipped when he lacks a warm air syringe. It is unfortunate that in its reintroduction, its use as a cauterizing instrument was overlooked. Had this been kept in mind, we would not see the clumsy instruments now sold for want of better.

 DENTISTS' HEADACHES.

WORKING at the dental chair, as is well known, taxes the eyes very severely. Unfortunately, it often happens that both eyes can not be fixed on the working point. This, and the fatigue from standing in constrained positions, often bring on a form of headache not peculiar to dentists, but perhaps more common to dentistry than to any other handicraft or occupation. The first article in our April number sheds light in this direction. The pain is often very acute, totally unfitting the victim for professional duty. Even temporary relief is to be hailed as a blessing in such cases. For this we know of nothing better than Trousseau's Formula for headache, which is composed of laurel water and cyanide of potassium. Trousseau's recipe is as follows:

R.
 Potass. Cyanide.....grs. iv
 Aquæ Lauro-cerasi. $\frac{5}{8}$ iv
 Ft. solut.....m
 S. Poison. Moisten a compress and apply to seat of pain.

The reader not familiar with the art of writing recipes can copy the above, and have it filled at any drug store, or he can

charge his memory with the proportions of the formula thus: Four grains of the cyanide of potassium to a gill of laurel water. But, in all events, mark it "Poison."

LITERARY PIRACY.

THOUGH a little late, we feel it our duty to notice a transaction far from honorable or honest, if the facts are as represented. We learn from the *Medical News and Abstract* that certain English publishers have reproduced Mr. Presley Blakiston's "American Health Primers," omitting the names of both authors and editors, and giving the impression that the books have an English, instead of an American, origin. They call them "Ward and Locke's Long Life Series," as if an original publication. According to the *News and Abstract*, "everything that could show they were American in origin has been cut out."

SUGGESTIONS TO CONTRIBUTORS.

MANY in the profession think and feel that, unless they have a very strange case, or some remarkable experience to report, it is presumptuous for them to write for the journals. But, after all, such is not the most profitable writing. Young dentists, especially, are not in search of strange things, or peculiar cases that are likely to occur but once or twice in a lifetime, so much as they are looking for information as to the best methods in the most ordinary and everyday practice. The writer who tells exactly, and in few words, just how he fills an average compound cavity, is likely to give practical hints that will be useful to a goodly number of readers. The form of clasp that will control the rubber dam, and how to adapt it to a cavity at the margin of the gum in a lower molar, is a more profitable theme for journalistic discussion than schirrous tumors on the gums, or necrosis of the maxilla. Life is made up of common things; and the remark is true of all the occupations of life, dental surgery included. In agriculture it is better for the journal to tell how to reclaim exhausted soil than how to prevent pigs being killed by bears and alligators. Before the days of rubber dam, we were filling

a tooth where it was important to keep the free margin of the adjacent gum dry. To aid in this, we cauterized it with a current of hot air, to stop its secretion. Two of our brethren were watching the process, and one remarked, "Why have you never told us to do that?" To which we replied, "It is too small to write about," and his sharp reply was, "Then it is too small to do; and yet you do it." We felt that we had learned something, and mention the incident now only to impress the idea that whatever is fit to do is fit to describe.

THE EMERSON BINDER.

THE readers of the JOURNAL would do themselves a kindness to send direct to our publishers, Messrs. Ransom & Randolph, and get this convenient and efficient binder, exactly adapted to the size of the JOURNAL, and appropriately marked on the back, in gilt letters, "OHIO STATE JOURNAL OF DENTAL SCIENCE, Vol. I, 1881," and then they can bind in each number as it is received, and thus they will readily be kept together, and in a good condition, fit for more substantial binding at the end of the volume, if such is desired; though many use the binder permanently, and like it. An advantage in keeping the successive numbers thus together, is that articles in preceding numbers are often referred to, and it will be found very convenient to have these numbers at hand, instead of at your residence while you are at your office, or *vice versa*. We are using two of them successfully, and can thus recommend them from experience. Price, fifty cents.

PERSONAL AND POETIC.

WITH feelings of profound sorrow we have learned, and announce, that our esteemed and talented father and brother, Dr. J. A. Robinson, of Jackson, Michigan, has been disabled, for several months, by an attack of paralysis. How dear to the hearts of us all is our own "Uncle Jerry"; for we all claim him, and his great big heart has room for us all. "Uncle Jerry" is the kind for whom "there remaineth a rest." It is all right with him; but what about our lonely, orphaned hearts, should he be

asked to come up higher? In this number of the JOURNAL, he gives us a highly suggestive little contribution full of sharp, practical points. He was always practical. Also a beautiful little ode to "May." He was always poetical. This *may* be a little off date; but the JOURNAL has no May number. Think of the cool, bleak, chilly weather of the first week in May, and appreciate the little gem accordingly. May the worthy Doctor be long spared to us here; but the little ode will be read with kindly feelings after he has gone *home*.

We can scarcely think of Dr. R. being laid on the invalid shelf. His life has been long spared; and through it all, he has been the type and emblem of all that is busy. And like his Master, whom he serves, he has gone about doing good.

THE AMALGAM QUESTION ONCE MORE.

A BAD reader, at family worship, was annoyed by the names of Nebuchadnezzar's furnace victims. As they entered the fire, he expressed a hope that he was done with them; but he soon saluted his family with a whistle of astonishment, and the remark: "Here come my long named laddies out to torment again." Whew! Here comes the Amalgam question again! We learn from the *Dental Cosmos*, for May, 1881, that Dr. Trueman read a paper, at a meeting of the Pennsylvania Association of Dental Surgeons, December 14th, 1880, entitled "Amalgam; its defects and the progress made in improving it." With the paper we have nothing to do at present. The ideas set forth in discussing it, claim our attention.

Dr. Peirce "thought that the discoloration of the old silver amalgam was largely due to the affinity silver had for sulphur; hence the black which was noticeable was simply sulphuret of silver." Not quite so "simply" as this, however, as the suboxides of silver and mercury, are formed at the same time, and they are black. In volume XV of the *Dental Register*, page 451, we discussed this subject of the blackening of amalgam fillings, in an article which was editorially commended by the *Dental Cosmos*. The same, in substance, may be found in Watt's Chemical Essays. We have seen nothing fuller or better since in reference to it.

Dr. Peirce further remarks that, "He presumed that this

was recognized by Dr. Townsend, and probably for this reason he added five parts of tin to four parts of silver, which is the formula of his amalgam.

The trouble with this is, that Dr. Townsend, by his own testimony, had nothing whatever to do with the formula, as he obtained it, body and soul, from Dr. Wm. Hunter, of Cincinnati. (In parenthesis, we may say that after careful experiment with it, Dr. Townsend totally abandoned its use, and in print, advised others to do likewise). Dr. P. also "believes tin has a therapeutic influence on the teeth." How? Are not metals, as such, inert? Or does he mean that by the action of the soluble chlorides in the buccal fluids, a chloride of tin is formed? If so, he is correct; for chloride of tin is antiseptic, and tends to arrest some forms of decay, or at least one of the four varieties. This we have long taught, as we have had opportunity.

At the same meeting, Dr. Buckingham is represented as saying: "He thought the active agent of decay was oxygen." But, in the most common variety of decay, the most oxidable matter of the dentine is nearly all left in the cavity. Can it be that oxygen dissolves out the lime-salts and leaves the organic matter almost untouched? We make all due allowance for mistakes in reporting, but while these two eminent men are thus reported, it is too dangerous to allow such teachings to go unchallenged. Had they been men of no influence they would not have been noticed.

DOCTOR GEORGE H. CUSHING has made the JOURNAL smile by a generous donation of some seven volumes of the Transactions of the American Dental Association. Thanks! Brother G. H., Thanks!!

OUR ARTICLE ON CHOLERA INFANTUM.

THE JOURNAL aims to diffuse among dentists a more accurate knowledge of the diseases which directly impair dentition than is generally possessed. In accordance with this, we present a brief article on the well known, and yet not known, scourge of infancy. Perhaps no other disease is so disastrous to first dentition. This

article is written by an esteemed physician, of ripe experience, but who is so modest that he hides behind "GALEN," as a fictitious signature. Read it carefully.

METALLIC POISONING.

THE most obstinate incredulity known is in reference to metallic poisoning. The printer, the painter and the dentist are equally sceptical. The first two, accordingly, persist in poisoning themselves, and the latter as persistently poisons his patients. Silver poison is its own tell-tale. We have seen quite a number of beautiful complexions ruined by wearing silver plates, with artificial teeth. We have seen the same results from amalgam fillings, but it is dangerous to say so; for "our craft is in danger." The cases detailed below are still more remarkable as illustrations of the potency of silver as a poison.—ED. JOURNAL.

ARGYRIA FOLLOWING THE FREQUENT PHARYNGEAL APPLICATION OF NITRATE OF SILVER.

A woman, aged forty-six years, noticed a bluish discoloration of the entire cutaneous surface, following repeated pharyngeal cauterizations with the silver nitrate stick. Similar cases have been recorded, one by Krishaber, and a second in the *Gazetta medica Italiana* (1862). The absorption of the silver salt takes place in part from the mucous surface of the cauterized portion, but principally from the intestinal surface, the products of cauterization being conveyed to the alimentary canal.—*Archives méd. Belges, September, 1880.*

A VERY ANCIENT MEDICAL BOOK.

THE *Chemist and Druggist* tells, on the authority of the *Lancet*, that the learned Orientalist Ewers (Ebers?) has recently discovered, at Cairo, Egypt, a medical book written 3,500 years ago. This takes us back to the time of Joseph's rule in Egypt. Its external appearance is not much like that of the JOURNAL, but we would like to have some extracts from it. But just think of bookmaking then in comparison with the present time.

Question and Answer.

"If you don't see what you want, ask for it."—BILL O'FARE.

Editor of the Ohio State Journal of Dental Science.

Would you tell us what are the principal constituents of artificial teeth?

YOUNG DENTIST.

ANSWER, BY THE EDITOR.

You could have ascertained from the books; but it will not take much space to give you, at least, a general answer: A rock known as feldspar is a prominent ingredient in all porcelain. To this is added quartz rock, sometimes called silica, and kaolin, or porcelain clay. These ground together, in proper proportions, constitute the "body." Various metallic oxides are added to give the desired tints and colors. Quartz, chemically speaking, is an acid, and by the aid of heat it unites with these metallic oxides as bases, to form salts, and these salts vary in color as in nature. The dull yellow may be obtained by adding oxide of titanium, the blue, from platinum, the gum color from oxide of gold, or a compound oxide of gold and tin, called the purple of Cassius. These, we believe, are the principal materials used; and it follows that artificial teeth are genuine porcelain.

Editor of the Ohio State Journal of Dental Science.

Will you please state, briefly, which was the first monthly dental periodical, where, when, and by whom was it first published?

Respectfully,

YOUNG DENTIST.

ANSWER, BY THE EDITOR.

The *Dental Register* was started, as a quarterly, by the Mississippi Valley Association in October, 1847; and was first issued as a monthly in July, 1859, with John T. Toland, publisher, Cincinnati, Ohio. It was then edited by J. Taft and George Watt.

CANTON, May 16, 1881.

Dear Sir:—Are we now free from obligations to the rubber patent? Are injunctions against dentists of no force? and is the

facetious Huckins left to seek employment in other spheres? Answer in JOURNAL. Yours, J. H. SIDDALL.

ANSWER, BY THE EDITOR.

We believe the Cummings patent expires with June 7th. Not long ago the agent told a friend of ours that for the remaining limited time, it would not justify the Rubber Company to sue out injunctions, but they would still prosecute for infringement where there was a reasonable prospect of collecting damages if awarded. Unless new life should be infused, we suppose the rubber patent nuisance is about as dead as bacon.

Books and Pamphlets.

"I leave you here a little book."—JOHN RODGERS.

DR. ADOLF PETERMANN'S DENTAL ALMANAC FOR 1881.

THIS interesting little trans-Atlantic friend has again made its annual appearance.

To the mass of American dentists this "little book" may not mean anything more than an alphabetically arranged list of practicing dentists in Deutschen Reich and Austro-Hungary, with perhaps other similar statistical information. To the few who have been cognizant of the author's unrelenting warfare against the practice of trafficking in bogus diplomas, issued by various illegal and unrecognized institutions of this country, its successful and regular issue becomes, to say the least, a matter of quiet astonishment, in that Dr. Petermann should not, in his single-handed effort to unearth and expose this great fraud, have long since become discouraged and been induced to abandon the enterprise instead of so faithfully continuing the arduous undertaking. It seems, therefore, but due him that the dental profession at large should be made acquainted with what he is accomplishing in this connection.

Having spent several years in this country, and being a graduate of the Philadelphia Dental College (1869), he was well assured that our dental colleges are forbidden by law, as well as by their own regulations, to grant diplomas or confer degrees upon any, either at home or abroad, unless they have attended the

prescribed course of lectures, have passed their examination, and have *earned* their diplomas—not simply purchased them.

On learning that several practitioners had become possessed of such documents, without ever having been absent from their respective homes, he could only conclude that there must be something wrong, and found the explanation in the fact that several agents of "Dr." John Buchanan, of Philadelphia, were established in England and on the continent, selling bogus diplomas to any one who might choose to purchase. The "trade" in these illegal papers was advertised in some very respectable dental journals, and so the business flourished.

How to suppress this shameful swindle, and at the same time call the attention of the authorities to these illegal transactions, became a matter of great moment with him. He found that he could not rely upon the profession for efficient help in this; even the societies and publications of Germany, although bitterly censuring the American dental colleges, failed to take hold of the matter in a way which would be productive of practical results.

For want of proper information concerning our regular dental colleges, and deceived by similarity of names, many of the best dentists of Germany believed that diplomas of the "Philadelphia University, John Buchanan, M. D., Dean," to be equally valuable with those conferred by the colleges proper.

In order to ascertain as to who had a genuine American diploma, and who had a "Buchanan diploma," he collected all facts and information, and concluded to adopt the plan of publishing as accurate a register as could be compiled of dental practitioners, together with their professional status. It was an individual enterprise requiring a good deal of nerve to successfully carry out. The cost of collecting data, compiling and publishing the same, must have been considerable; then offering no inducements in a financial way for the prosecution of the work. Added to this was the conviction that he must inevitably make many enemies. Still he persevered.

The first number was issued in 1877, and, naturally, created quite a sensation. Buchanan's agents found their lucrative business seriously interfered with, and those who had purchased of him were naturally chagrined that their weakness—to call it nothing worse—was thus exposed.

A few months after an opposition pamphlet was published in

Berlin, by a certain Mr. Chapison, entitled "Anti-Petermann," a most scurrilous pasquinade, in which Buchanan's institutions and "universities" were most zealously defended and our colleges proper outrageously belittled and defamed, Dr. Petermann, of course, being most maliciously abused.

It is mortifying to know that very few of the German dentists enlisted themselves on the side of right in this contest. Even the otherwise excellent dental quarterly, *Deutsche Vierteljahrsschrift für Zahnheilkunde*, remained neutral in this effort at reform, if anything, leaning toward the opposition.

Notwithstanding all these discouragements, Dr. Petermann quietly persevered in his undertaking. The second edition, more complete, and with new and interesting material added, a more extensive correspondence with the holders of bogus diplomas, made the little book still more interesting than the first. In the third edition, which followed in 1879, the Austro-Hungarian Empire was added.

This is its fifth annual appearance. Dr. Petermann has now the proud satisfaction of knowing his object, in a great measure, accomplished, and this dishonorable traffic, for the time at least, suppressed. This late disreputable business has had the effect of lowering the value of American medical and dental diplomas on the continent, and hereafter it would seem advisable for foreign dental graduates in our colleges to have the standing of said institutions, and genuineness of diplomas received, vouched for by the consular representatives of their respective countries, ere their return to the same; if necessary, by seal and signature.

The *Almanac* for 1881 contains steel engravings of two prominent German dentists; also a complete list of practising dentists of the German and Austro-Hungarian empires, alphabetically arranged, together with professional status of each; obituaries of those who died the past year; a list of cities, also alphabetically arranged, with the number of their inhabitants and the practising dentists in each. Statistics: The area and inhabitants of the German empire are given. There are 42,727,360 inhabitants; 506 dentists, of which 11 are women. These dental practitioners are established in 164 cities. Austro-Hungary, with 35,904,435 inhabitants, has 144 dentists, established in 34 cities. In both empires, 78,631,795 inhabitants, 650 dentists, in 198 cities. Among these are 77 D. D. S.'s, 45 M. D. and Chir., 35 M. D.'s, 15 Dr. Philos.,

4 Drs. Chir., and 2 Drs. Dental Medicine. Abstracts of proceedings and decisions of the courts in regard to violations of the laws regulating the practice of medicine and dentistry. Also a complete list of the dental journals and periodicals, wherever published, of which the old *Dental Register*, J. Taft, D. D. S., editor, is the senior and first on the list. It also publishes all dental societies, the time and place of their meetings, and all dental depots, and where located, in the two empires.

All in all, it is a very comprehensive little work, full of useful information to any one who takes an interest in the condition of dentistry in Europe, and especially so to those who contemplate going there with a view of practicing dentistry in any of the countries therein mentioned.

It is to be hoped that Dr. Petermann will find it sufficiently remunerative to guard him from actual loss; he certainly deserves every support the dental profession of this country can possibly give him.

R.

TRANSACTIONS OF THE OHIO STATE DENTAL SOCIETY, 15th Annual Meeting, Columbus, December 7th, 8th and 9th, 1880. Published by order of the Society. Ransom & Randolph, Toledo, Ohio.

This is a neat volume of some seventy-five pages, to which the publishers have added over forty pages of advertisements. It is gotten up in a style creditable to the publication committee and the publishers. The committee, as we can testify, bestowed much labor on it, more really than should be asked gratuitously from any two or three members. Should the Society still continue to publish in present form, it should appoint an editor, familiar with such business, and give him a reasonable compensation. Of course, the committee would still decide what should, or should not be published; but many who are able to write good, solid thoughts, are not familiar with the preparation of manuscript, hence, editorial revision would give better results. We commend the present committee for its successful work; and do not suggest that an editor would have done better now, but the committee was overworked; and the result is that the volume is more correctly gotten up than most of its predecessors.

The volume gives a list of the officers, from the organization of the Society till the present time. It next gives the official minutes, then some five brief essays, the discussions, as reported by Mr. R. N. Bulla, and revised by the publication committee,

then a list of the active members, of the honorary members, the law regulating the practice of dentistry, that regulating the administration of anæsthetics, a table of contents, a resolution assigning the publication to Messrs. Ransom and Randolph, Toledo, Ohio, with the conditions of publication, and the usual "disclaimer" by the committee. Such is the volume proper of the "Transactions." Then follow the advertisements, beginning with that of the OHIO STATE JOURNAL OF DENTAL SCIENCE, an enterprise born at the meeting which gave rise to these "Transactions."

A few extra copies are still on hand. Members of the profession, in this or other States, can get them by addressing the publishers, or the Recording Secretary, W. H. Sillito, Xenia, O., with three cent stamp.

PROCEEDINGS OF THE NEW JERSEY STATE DENTAL SOCIETY, FOR THE YEARS 1878-9-80. Chas. A. Meeker, John C. Hanks, Publication Committee.

This is a neatly gotten up volume of some 209 pages. We have not had time to examine, much less to digest its contents. We hope to have leisure to examine it carefully, and we may be able, through some of its suggestions, to enlighten the readers of the JOURNAL, which would afford us much sincere delight. We thank the sender for the volume.

CALENDAR OF THE UNIVERSITY OF MICHIGAN FOR 1880-81. Published by the University.

As usual, this is a neatly gotten up book. It contains over 160 pages, gives full information of the working of the various departments of the University, which, as an educational institution is nothing short of extensive. Think of 521 students in the Department of Literature, Science, and the Arts; 380 in Medicine and Surgery; 371 in Law; 88 in Pharmacy; 88 in Homœopathy; and 86 in the Dental Department, making a total of 1,534.

In the list entitled, "Members of the Faculties and other Officers," we find an array of eighty names, enough for a camp-meeting, yet in looking over the various courses of study, there appears to be something for each one to do. We failed to find the ornamental member. We dare not set forth the various studies

prescribed, lest our readers should feel that if that much science lies ahead, it is too large a task, and should give up in despair. Looking over the various *curricula* makes us feel that we are just beginning to learn the alphabet, without hope of ever reaching "baker."

It is not strange that the whole State of Michigan is proud of her University. Just say "University" in the presence of the average "Michigander," and he elevates his head and arches his neck in genuine gander style, and steps as if he disdains to walk the earth outside of Michigan. It has been stated that her Congressmen insert a half inch layer of Michigan soil between the inner and outer soles of their boots before starting to Washington. We don't believe the story, but wouldn't blame them if it were true. If we owned that University, we'd be very saucy.

A SYSTEM OF ORAL SURGERY, being a Treatise on the Diseases and Surgery of the Mouth, Jaws, and associate parts By James E. Garretson, M. D., D. D. S., Dean of the Philadelphia Dental College, Surgeon in charge of the Hospital of Oral Surgery, etc., etc. Illustrated with numerous steel plates and wood-cuts. Third edition, thoroughly revised, with additions. J. B. Lippincott & Co., Philadelphia, Publishers.

This valuable work is laid on our table by our own, not by its publishers. and we notice it in the interest of our publishers, who have it for sale, and of our readers who ought to purchase and peruse it. As compared with former editions, this is re-arranged, and almost entirely re-written, a number of new chapters are added, and it contains some two hundred additional cuts.

The first eight chapters are devoted to Operative Dentistry, the next two to Prosthetic Dentistry, Chapter XI., to the Surgical Anatomy of the Mouth and Face, and so on to Chapter Sixty-one, which consists of twenty-two pages, devoted to Anæsthesia. The book may truly be called a carefully elaborated system of the surgery of the mouth, face, and adjacent parts. The general surgeon can find just what he needs in regard to the surgical diseases of these parts, and the various operations that may be required, while the dental surgeon can find very much to aid him in diagnosis as well as in treatment of the parts that come under his care. The author's fifteen years' experience as a dentist laid a good foundation for the production of such a work; and had it

not been for these years, the book would not have been written. The text-books on general surgery pass very lightly over the parts included in the term oral surgery, as compared with this book. It contains 541 illustrations.

For sale, at publishers' rates, by Ransom & Randolph, 83 Jefferson street, Toledo, Ohio.

PLASTICS AND PLASTIC FILLING. By J. Foster Flagg, D. D. S.

This book is laid on our table by *our* publishers. It is a pretty book. It is a very pretty book, as pretty as a parrot. It is gotten up by Mr. Presley Blackiston, 1012 Walnut street, Philadelphia, in his finest style. Therefore, it is a beautiful book. It is inscribed by the author, to the "New Departure Corps."

The book consists mainly of plastics, as set forth in eighteen articles, written originally as magazine articles, but published preferably in this form. From the appearance of the book, and the well-known character and energy of the author, we presume that plastics are thoroughly discussed in this volume. We have not yet had time to read it. It is the standard text book of what its author and a few others were pleased to call the "New Departure," and, as far as we have had time to read, it appears to be made up of special pleading in this direction.

We read of a *new departure* in the fifteenth chapter of the Gospel by Saint Luke. It was not a success. The *return* was worth two such departures. We are fattening the calf. For sale by Ransom & Randolph, Toledo, Ohio.

THE ORIGIN AND FORMATION OF THE DENTAL FOLLICLE: By Drs. CH. LEGRAS and E. MAGITOT. A translation from the French, with introduction and notes by Dr. M. S. DEAN, of Chicago.

THIS is a very neat and edifying book. It contains all the illustrations of the French work, with additions, original and selected. It makes a volume of over two hundred pages. It is printed by Jansen, McClurg & Co., Chicago, and may be obtained from them, the translator or booksellers in general. The translator will accept our thanks for a copy of the volume.

The following monographs, etc., have been received, but lack of time and strength has prevented a careful reading or formal notice.

A DIRECTORY OF THE DENTISTS OF MISSOURI, compiled by JOHN G. HARPER, D. D. S.

SELF-CONFIDENCE, AN ESSENTIAL ELEMENT IN THE CHARACTER OF THE IDEAL OR MODEL DENTIST: By Dr. EDGAR PALMER; read before the Iowa State Dental Society.

ORAL ELECTRICITY AND THE NEW DEPARTURE: By Dr. JOHN J. R. PATRICK; read before the American Dental Association, Boston, August 4, 1880.

CARBOLIC ACID AND CREOSOTE: Their chemistry and therapeutical application to the practice of dentistry; by TRUMAN W. BROPHY, M. D., D. D. S., Clinical Lecturer, etc., Central Free Dispensary and Rush Medical College, Chicago, Ill.

CARIES OF THE SUPERIOR MAXILLA: By the same author.

DENTISTRY AND DENTAL EDUCATION: Its past, present and future, as related to medicine: By W. W. ALLPORT, M. D., D. D. S., Chicago.

THE POSITION THAT DENTAL AND ORAL SURGERY IS DESTINED TO OCCUPY IN AMERICA: By TRUMAN W. BROPHY, M. D., D. D. S., etc.

ANÆSTHESIA: By W. C. BARRETT, M. D., D. D. S., M. D. S., Buffalo, N. Y.; read before the American Dental Association, Boston, August 5, 1880.

RAPID BREATHING AS A PAIN OBTUNDER IN MINOR SURGERY, ETC.: By W. G. A. BOXWILL, D. D. S.

MEDICAL SPECIALTIES: By Dr. JOHN J. R. PATRICK; read before the Illinois State Medical Society.

PROGRAMME, ETC., Kansas State Dental Society. (Let Sec'y send officers elected).

INJURIOUS EFFECTS OF VULCANIZED RUBBER, written for and published in the Chicago Medical Journal and Examiner, January, 1881. By Dr. L. P. HASKELL, Chicago.

WE enlarge our space to make room for a copy of the Illinois law regulating the practice of Dentistry, which was forwarded to us, as soon as passed, by our friend Dr. Brophy. Also we make room for a communication in reference to the same. Thanks to the senders.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. I.

AUGUST 1, 1881.

No. 4.

Contributions.

“Withholding facts is robbery.”—ORVILLE DEWEY.

SANGUINARY CALCULUS.

BY L. C. INGERSOLL, KEOKUK, IOWA.

By the above title I would designate that structureless calcareous deposit sometimes found at the apex of the root of a tooth, sometimes extending in a line of granules along the root from the apex to the neck of the tooth, and sometimes in a line encircling the root, just under the free margin of the gum.

The profession have been accustomed to ascribe all accretionary deposits of lime salts found in the mouth to a salivary origin, calling all such deposits by the technical term *salivary calculus*, as indicating what science knows of its origin. But I hope, by a consideration of important physiological and pathological facts, to make it plain that saliva cannot be made responsible for all calcareous deposits found upon the teeth.

To avoid mistakes at the outset, I will say that I have no

reference to that bony deposit upon the roots of teeth known as *exostosis*. This is a structural formation—a pure ossification, and should be distinguished from calcification and lime depositions.

In the process of ossification there is an impregnation and intimate union of lime salts with the vital tissue, forming a *new structure*, with organic functions. On the other hand, *calcification* and lime deposits are an *infiltration* of calcareous matter into the cellular and fibrous structure, or a concretionary or accretionary deposit of visible calcareous particles upon the surface, or within the cavity of an organ. Such are without definite form or structure, except as the deposit or concretion is molded into form by the surrounding tissue, and purely mechanical means.

Let us now attend to the main fact and rationally account for it. It is no new thing to discover, on the roots of teeth, far toward their terminal points, granules of calculi. On making this discovery, the question naturally arises, how could salivary calculus have reached so remote a point? The gum, though not in such cases always united to the neck of the tooth, is still found in such close contact as to exclude the presence of saliva within the alveolus unless injected by some external force.

It might occur to some one that gravity and capillary attraction are sufficient forces to bring saliva in contact with the roots of teeth to their extremities. But gravity is not a force acting upward and within the sockets of the upper teeth, where the deposit is as often found as in the sockets of the lower teeth. And capillary attraction acting, implies open pores and seams to be filled, which are not found in the cases referred to; and a sort of circulation and change of fluid would be necessary in furnishing the amount of deposit found, which change of fluid capillary attraction cannot produce. In any case, saliva could not be found there in such quantity, and for such length of time, as to supply the amount of calcareous matter often found on the apices of the roots of teeth. We may say, therefore, that *practically* saliva is excluded from the alveoli. This point, I think, must be at once conceded. With this concession, the *salivary* origin of the calcareous deposit must be abandoned.

I desire that distinction should here be made between the deposit which I have named and that deposit of tartar which is found beginning to form upon the crowns of teeth and about their necks, gradually encroaching upon the gum and alveolar pro-

cesses, which are wasted away by its presence, thus denuding the roots and exposing them to the same salivary deposit. This is not the deposit of which I am speaking; but of that which is wholly concealed from view, the presence of which is known only by a careful examination with an instrument, or by observation after the tooth is extracted. Further on I will make mention of the same deposit under a change of conditions, and more readily seen.

The teeth on which this kind of calculus is found are affected with ulceration. There are two forms of ulceration affecting the teeth, differing from each other in their inception, both as to the *cause* producing the ulcerative condition, and the *point* at which the ulceration begins.

The first form which I shall mention, is that deep-seated ulceration which begins at or near the apex of the root, is usually preceded by alveolar abscess, and arises from the same cause. This I have termed *alveolar ulceration*. Having some of its manifestations like alveolar abscess, it is often mistaken for that disease. The distinction between alveolar abscess and alveolar ulceration I have attempted to establish in a paper read at the annual meeting of the Iowa State Dental Society, in May last. The only distinctions to which I need allude here are, that in case of alveolar ulceration there is no organized fibrous tissue lining the walls of the cavity, and confining by circumscribed limits the accumulated pus, as in case of alveolar abscess; and no defined canal or tube through which the confined pus is discharged.

On the other hand the pus formed in ulceration oozes through openings in the overlying tissue, or, trickling along the surface of the root, escapes at the neck of the tooth. It will be noticed, also, that the pus is not of the same consistency as that discharged from an abscess, but of the serous kind—not thick and offensive in odor, but watery and nearly odorless. It is made up chiefly of the serum of the blood. From the blood is extracted, by the nutritive functions, all the elements composing the solid as well as the soft tissues of the body. The blood contains all the lime salts that enter into the formation of bone, as well as the fibrin, gelatin and fat of the soft tissues. The *liquor sanguinis* is the common solvent and holds in solution all the soluble elements that enter into the nutrition of the body.

When any inflammatory process has gone so far as to create

a lesion in the capillary tissue, a portion of the liquor sanguinis escapes and infiltrates the surrounding tissue, occupies all interspaces and bathes exposed surfaces. Of course it carries with it all the soluble elements it contains and mingles with other waste material disengaged by the inflammatory process.

The liquor sanguinis, thus escaping, becomes disorganized by being exposed to air and relieved from the pressure of the heart's action. The original elements lose themselves in the surroundings—sulphureted hydrogen and carbonic acid gas escape into the atmosphere—water into the saliva and mucus, and in the general breaking up, the lime salts which were held in solution are deposited where, by a law of crystalization or by natural affinity, they are drawn. The tooth bone having the largest proportion of mineral of any of the surrounding tissues, has the strongest attraction for the calcareous matter, and becomes the nucleus for the deposit.

In case of an alveolar ulceration we have a cavity containing pus, but not confining it in a pocket made up of abnormal tissue, as in case of abscess, but pus unrestrained in its flow, bathing freely the surface of several kinds of normal tissue. Here are the inflamed surfaces of soft tissue, the alveolar bone and the root denuded of its peridontium, and, the tooth bone with its large percentage of lime salts affording the strongest nucleus, the lime salts, liberated from the blood-serum, receives the deposit. This seems to me to be a rational account of the formation of calculus on the extremities of the roots of teeth. It is quite possible that a portion of the lime salts deposited may have come from the breaking down of the paries of the alveolus. But we sometimes find deposited a much larger portion than could possibly have entered into the bony structure which has been wasted. From whatever source the supply of lime salts is derived in forming the deposit, it is certain, in the cases under consideration, that the saliva is not the vehicle for conveying the calcareous matter to place of deposit.

There need be no doubt that the blood contains lime salts in ample supply to account for the deposit, when we consider that the tartar found deposited on the crowns of teeth, evidently having a salivary origin, was in the blood before it was in the saliva, and from the blood was secreted in combination with the salivary fluid, by the salivary glands.

Calcareous deposits and infiltrations are found in nearly all the organs and tissues of the body, and in every case the blood must be the fluid in which the calcareous matter is primarily found in solution. The diseased condition producing this form of calculus is so often mistaken for alveolar abscess, I wish to repeat that it is never found in cases of true alveolar abscess. But when the abnormal tissue of the abscess, with its shredded mass of coagulated lymph, has been broken up and the whole abscess cavity presents an ulcerating surface, the disease is no longer *abscess* but *ulceration*. This is the condition favoring the formation of *sanguinary calculus*. It must not be inferred, however, that such deposit is always found on ulcerating teeth, but it should always be suspected, and search for it should be made in the diagnosis of every case, as its removal is a necessary step in the cure.

The sanguinary calculus which I have thus far noticed in this article is that which is found deep in the socket and on the extreme end of the root—the deposit beginning to form there because the ulceration, of which I have been speaking, begins there. Such are cases usually preceded by alveolar abscess, cases in which the tooth pulp is dead.

I wish now to call attention to the same deposit found near the neck of the tooth, under the margin of the gum, on teeth with living pulps. This, too, is the result of ulceration, but arising from another cause: that first named usually arising from the death of the pulp, while the last named arises from a deposit of *salivary* calculus about the neck of the tooth, producing ulceration of the gum.

At first a light-colored, creamy deposit is found, consisting of a matrix of particles of food, mucus and epithelial scales, with an infiltration of lime salts from the saliva, which gives the deposit a chalky firmness. Its irritating effect is seen in a red line on the margin of the gum. As the deposit of salivary calculus increases, the color of the gum changes to a deeper red. At length the peridental membrane is involved, and as the inflammatory process proceeds, there comes on capillary engorgement and a final breaking down of the tissues. The root membrane about the neck of the tooth is destroyed and the union of the gum with the tooth is broken. This is the beginning of ulceration. As the disease progresses the alveolar processes are attacked, and the color

of the gum changes to a purple, while the calcareous deposit resting upon the margin of the gum has also changed its color from light cream to light brown, shading into dark brown and under the loose margin of the gum the deposit is almost black. We have now in this incrustation *both* kinds of calculi. The deposit is neither wholly salivary nor wholly sanguinary, a deposit on the crown from the saliva of the mouth, and a deposit under the gum, upon the root of the tooth, from the *liquor sanguinis*, which is poured forth in the ulcerative process. On a line with the margin of the gum there is doubtless a mingling of calculi from both sources. That upon the crown of the tooth is chalky with increased firmness about the neck of the tooth, while that below the margin of the gum has more the hardness of stone and is very firmly fixed upon the root. Salivary calculus is stained with tobacco, tea and various kinds of food. The sanguinary calculus found under the gum and beyond the reach of what enters the mouth, is stained undoubtedly with the hematine of the blood. The superior hardness of the sanguinary deposit is probably due to the fact, which may fairly be inferred, that it is more purely mineral than salivary calculus.

This sanguinary tartar is also found on the roots of teeth, having no salivary deposit whatever. It is recognized as a line of black tartar, very hard, under the free margin of the gum. Had it a salivary origin there is no accounting for its presence under the gum, and *not* on the crowns of the teeth in such cases.

But being of a sanguinary origin it is found only where the serum of blood is found, which being decomposed, parts with its lime salts; and thus material is found for the deposit. Three days ago an interesting illustrative case was presented at my office for treatment. The patient was a man about 35 years of age, of good physical developement, with teeth of the firmest structure, not one of which was decayed, and none had been lost from the set. The crowns were clean and bright—being entirely free from salivary calculus. The gums were highly inflamed, loose from the teeth and in several places slit vertically. Under the gum and on the roots was a very dark, hard crust. On some of the teeth it formed a mere ring encircling the root just below the margin of the gum, on others it covered nearly or quite half the length of the root. It will scarcely be necessary to say that the gums were in an ulcerating condition, yet this is *the* important

thing to be observed regarding the case. Except for the observation of this fact the presence of the tartar could not, in my opinion, be satisfactorily accounted for. The inflammatory process that preceded caused the transudation of *liquor sanguinis* and the formation of serous pus from which this peculiar form of calculus was deposited. It will be seen, therefore, that sanguinary calculus is one of the results of inflammatory action and not a cause; while, on the other hand, salivary calculus is a cause of inflammation and not a result.

CHOLERA INFANTUM.

BY GALEN, XENIA, O.

SECOND PAPER.

THE *causation* of cholera infantum is very various.

1st. TIME:—Hot summer months, notably July and August, while previous to this time, and sometimes later in the season, we find the disease. We find that a temperature of 75 to 90 degrees Fahrenheit for ten days to two weeks will usher in an epidemic of cholera. It follows then, that *heat* is an important factor in the production of cholera infantum. This state of affairs we cannot change, or wholly avert; hence it becomes a matter of the highest importance to make use of the best prophylactic measures possible.

Food is an important element in the production of this disease. Unripe fruit, acid food, or food that has gone through a species of fermentation, the change from milk to solid food, and this before the stomach of the child is able to receive it, with the change of temperature from comparatively pleasant weather to extreme heat, 80 to 90 degrees Fahrenheit, certainly brings the destroyer of infants in full force, and fully equipped to perform its part soon and well.

Sanitation is but little understood, and we find mothers and nurses subjecting their charges to these climatic changes, with scarce a thought of the effect that is being wrought, and only wake up when the mischief is done.

The morning may be hot and sultry, before evening, the

babe, clothed in the lightest of fabrics, is exposed to a cool atmosphere, and the extremities become chilled, the patient becomes restless, the nerve filaments are unduly excited, nausea and vomiting are induced, then purgation, the pneumogastric nerve by reflex action is set to work, and we have the phenomena of cholera infantum fully inaugurated.

Many mothers think the little ones must eat, and the digestive tube is filled with food entirely unsuited to its wants, and nature rebels and commences the process of unloading, and the delicate organs suffer *lesions* that prove fatal.

Functionary action is retarded, sometimes completely set aside; then we inquire what organs are in fault, or, to be more explicit, we say what *structural changes* have been produced. For we know disease only by the change of structure, hence it follows that change of structure is *organic lesion*!

When organic lesion is present we are able to come to some definite conclusion as to *causation* and prognosis.

Bad ventilation is a cause of cholera, for it rages most in badly ventilated apartments, in cities, where the atmosphere is loaded with foul odors and vitiated air, the result of close confinement, and gases that arise from decaying matter, notably the gases from filth, excrement, cess pools, &c.

Therefore, writers on this subject say, "change of location," leave the crowded city, with its hot streets and stifling air, loaded with gaseous death, to the bracing atmosphere of the country, it will give new life to overworked little sufferers of cholera infantum, give them wholesome rational food, plenty of bracing air free from all impurities, and the change is soon apparent.

Malaria is also a cause of this disease, in malarious districts.

And now we come to *dentition*, as one of the great factors in the causation of cholera. Whether it is one of the primal inhibitory causes we know not with absolute certainty; but this we do know, that this physiological action is often the forerunner and augments the disease in a great measure, which is evidenced by the swollen gums and general features belonging to dentition. Then comes the irritated digestive tube, the flux consequent therefrom, the structural changes, and we call this condition of affairs cholera infantum.

Prof. Bedford says, that in the process of *dentition* the teeth

become the focus of a nerve-vascular force that communicates a pathological condition; which, in its turn, is communicated to the *medulla oblongata*, and by reflex action produces a condition that influences the branches of the great sympathetic, and then the pneumogastric nerve is affected, and nature sets up a drain upon the intestinal tract to get rid of the abnormal condition. This we call cholera infantum.

Again, Dr. Marshall Hall says that not only the nerves of the gums, but the *teeth* themselves, with the alveolar processes, and the fangs are engaged in this physiological action, and are powerful factors in creation as well as causation of the structural changes under discussion.

The disease is most apt to occur in feeble, delicate constitutions; in those of nervous and irritable temperaments.

It also occurs in certain families, and I am led to believe that heredity is a cause, for we know that certain families are predisposed to digestive diseases, and why may not the parent communicate to its offspring an impaired digestive organization, or one at least very susceptible to the influences that have been described? Of these may be mentioned children of nervous and irritable parentage, especially dyspeptics. And why may we not have choleric children from parents who were themselves so in childhood?

PROPHYLACTIC TREATMENT.—The danger that teething children are exposed to from a residence in cities, and localities where there is more or less vitiated air, during the hot months, is understood by those of an observing character, and most mothers make some provision for a change to a more salubrious region, when such a thing is possible; yet we find them often times paying but small heed to the injunctions of their physician, and it is with this latter class that we have the most to do. By a timely removal to the pure air of the country, the disease may be averted, if not entirely arrested. When this is not done, we then look after the *dress*, *diet*, and *exposure to good pure air*, as the best prophylactic measures that can be brought into requisition. Most authors claim that the child should nurse beyond the second summer, but our experience is somewhat different. If the process of dentition is tolerably well advanced, and the child be twelve months old in April, then wean him, and when the hot

months shall have arrived, he will be able to withstand the vigors of the season, and with care get through this dangerous period.

The diet should be very carefully selected, and should consist mainly of milk, with farinaceous substances in small quantity. Plain chicken or mutton broth, with rice boiled in it, water in which toasted bread has been steeped, blanc mange, &c., should be given, eschewing all vegetables and fruits.

After the teeth begin to show themselves, a small portion of mutton, chicken, or very tender beef, minced up fine, may be given each day, in addition to the milk, but the major portion of the child's diet must still consist of milk.

Fruits of all kinds, vegetables, except rice and Irish potatoes, and these very sparingly, must be avoided in the hot season, or until dentition is completed.

The dress is of importance as a preventive measure, and should be arranged to suit the temperature of the day. Light woolen shirts, very thin, should be worn in all weathers, with thin woolen socks, and in very warm days only a calico slip with sleeves. On cooler days a flannel petticoat.

Too much stress cannot be laid upon the importance of good, pure air at this time. The child being taken out, either riding, or carried, under the supervision of a careful nurse, in the garden or yard attached to its residence, or shady streets which are free from dust. But better than this a short excursion in the country, avoiding the intense heat of noon-day.

With these precautions, we are satisfied that the disease, if not entirely prevented, will be much modified, and more amenable to treatment.

Regarding the disease in a choleric light, we shall consider the treatment under these distinct heads, viz: *evacuation*, *collapse* and *reaction*.

Every child suffering with a diarrhoea, no matter how simple, in the summer season, should be regarded as liable to culminate in cholera infantum, and preventive measures should be instituted to retard, and, if possible, avert the calamity. The diet must first be attended to, the gums looked after, and if much swollen, and much distended, *lanced*. The condition of the mother, or nurse, should be taken into account, whether she is healthy, and the milk secreted is of proper appearance, specific gravity, reaction, &c., and whether the nurse is of

regular habits, temperate in eating and drinking, avoiding all alcoholic stimulants, acid fruits, and such food as produces a very free condition of the bowels. If on examination we find the milk good, the child may be continued at the breast, with the injunction to not allow it to partake of its food quite so often. If we find the nurse unhealthy, and unwilling to pursue the necessary sanitary requirements, then the child should be weaned at once, unless it be under a year old, and of very feeble constitution. If the child be weaned, then the food is of the utmost importance. It should consist chiefly of milk, cows milk, from a young and healthy animal, (Dr. Meigs says, a heifer with her second calf is to be preferred), diluted with water, and sweetened with loaf sugar. If we find that this does not agree with our patient, then a little cream, thin gruel, arrow root, pearl barley, water, &c., may be given. Mutton broth is of good service in the diarrhoea preceding the cholera stage of the disease. The therapeutical management should be simple, giving only such drugs as exert a palliative influence, *laxatives*, *astringents* and *carminatives*. If the diarrhoea has continued some days, with frequent watery discharges, the treatment should be begun by a dose of castor oil, a teaspoonful, with a couple of drops of laudanum, for a child under one year old; followed by bisnuth, ipecac, and chalk. If this does not check the flow, then hydrargyri cum creta, opium, ipecac, and bismuth may be employed with benefit, being careful however to not too suddenly stop the action, as you may meet trouble, by inviting congestion. My practice has been, for a number of years, to not allow the bowels of a child to remain longer than six hours without action, particularly when the patient is under one year old. If after the exhibition of the above the bowels still seem inclined to run, an injection of starch and tincture of opium will be found of benefit. Tannic acid, catechu, kino, &c., may be employed with good results. In the exhibition of opium and its preparations, great care should be observed to not push it too far, as we may bring on cephalic symptoms.

We may remark *en passant*, that *opium* is to be relied on as a sheet anchor in this stage of cholera, except where it is contra-indicated by peculiarity of constitution, etc.

The specific action of the drug is to be desired, and it may be pushed until its characteristic effects are produced, when the

remedy ought to be diminished, but not wholly set aside, for the great desideratum is to abort the course of the disease, and if we succeed in doing so, the probabilities are that, with careful watching, a recovery may be promised. Still, with all remedies, and the utmost care, the safe plan is not to promise a favorable prognosis.

When vomiting is severe, and our remedies are rejected, it is good practice to rely on an anal treatment until such time as we can return to the administration of medicine per orem. Injections of starch, tincture of opium, kino, bismuth, and the action of calomel, by the mouth, will generally quiet the untoward symptoms, and give us a clear field in that direction. Morphia and dilute sulphuric acid are given with benefit. The object in this stage is to prevent collapse, and if it should set in, we first endeavor to bring about a reaction. This is best accomplished by revulsives, such as warm baths, the application of stimulating fomentations to the epigastrium, soles of the feet, and palmar surface of the hands. A bath, with whisky in it, is often of much benefit in determining the blood to the surface.

As a remedy that is of the highest importance in the collapsing stage, I regard calomel, and next, bi-chloride mercury. Of the latter remedy, the best mode to exhibit it is a grain to two ounces of water, giving a teaspoonful hourly, in cold carbonic acid water.

After reaction has been established, should vomiting still be present, we would recommend Prof. Ringer's plan, that of administration of grey powder, one-fourth to one-sixth of a grain hourly. If after some hours this should fail, then creosote, in orange or peppermint water, with the topical application of mustard drafts to the epigastrium. For the excessive thirst of the disease, ice may be given when febrile symptoms are present, and large quantities of cold water, given often, so as to supply the waste of the *liquor sanguinis*. We regard it as not only bad practice, but positively cruel, to withhold from the sufferer of cholera the natural element to allay thirst. For there can be no condition in which you can place a child, that is more trying, and that saps his strength, nay even his life, faster, than to deprive him of cold water in cholera infantum.

A word as to the cephalic symptoms, and we will have done. These should be carefully looked for, and, on the first inti-

mation of their presence, antiphlogistic measures should be instituted. Cups to nape of the neck, blisters behind the ears, pounded ice to the head, and warm applications to the extremities—to invite, if possible, the circulation to more distant portions of the body from the threatened part.

Finally, to sum up, we should remove all sources of *irritation* from the alimentary canal, by *laxatives* and *antacids*, promote the hepatic secretion, relieving the portal congestion by some mercurial, *hydrarg. cum creta*, in ordinary cases. If the vomiting is persistent, then the *sublimated hydrarg.* is to be preferred; to incite cutaneous circulation by *diaphoretics* and *warm baths*; relieving irritation by *anodynes*; excessive evacuations by *astringents*; modify the morbid condition of the affected membrane by *alteratives*; and support the flagging energies by suitable *stimulants*.

Free use has been made of the works of Dr. Geo. B. Wood, Prof. Sidney A. Ringer, Meigs & Pepper, Dr. Francis Condie, and Dr. J. Lewis Smith, in the compilation of the foregoing paper.

OPERATIVE vs. MECHANICAL DENTISTRY.

A PLEA FOR DIVORCE.

BY DR. A. T. METCALF, KALAMAZOO, MICH.

IN a brief report of the proceedings of the Michigan State Dental Association, held in the City of Detroit, in March last, as furnished to the April number of your JOURNAL, by Dr. Rehwinkel, I find he has quoted the preamble and resolutions offered by me, proposing to abolish the Chair of Demonstrator of Mechanical Dentistry in the Dental Department of our State University; and as the burden of his report of that convention is a criticism of their purport, I send you the following brief reply.

The Doctor having generously accorded to me “due credit for honest convictions,” etc., in the position I have taken, I can do no less than, at the outset, to express the same kindly sentiments towards him in his opposition; and, at the same time, I

must express a sentiment of surprise, that so eminent a dentist as Dr. Rehwinkel, should lend his voice and his pen to delay the advent of that day when operative dentistry shall be acknowledged a specialty of medical practice.

By the words *operative dentistry*, I wish, for the sake of convenience, to be understood as including in the term, all treatment of the natural teeth, and medical and surgical treatment of diseases and deformities of the oral cavity.

The Doctor says—"the separation of the operative and mechanical branches of dentistry is a question which, in my humble opinion, would best be left to time to solve; and that *time* is not *yet*."

By the above declaration, Dr. Rehwinkel admits that there are two branches of dentistry—operative and mechanical. Having admitted so much, will he not admit also that the scope of operative dentistry is large enough, and broad enough, and deep enough, to furnish investigation and scientific research sufficient for a specialty in medical practice.

Admitting that in operative dentistry there is an amplitude to engage the time, energy, talent, and education in the specialty, I am unable to discover any possible wisdom in wasting those excellent and rare qualities in manufacturing mechanical appliances, which can be fully as well constructed by persons of less attainments—those who have mechanical and artistic abilities with or without superior scientific and medical knowledge. But Dr. Rehwinkel says—"the medical profession will not grant to dentistry a recognition as a specialty of medical practice." Of course not; neither ought we to ask such recognition so long as we defile our claims to a professional status by dealing in *store teeth*, or by manufacturing appliances which properly belong to skilled mechanics. The time was, and that time not in the dim, distant past, when the substitution of sets of artificial for natural teeth required superior knowledge and taste, and the most cunning handicraft; but since plastic materials have been substituted for metal, and whole sections of artificially carved teeth for the single ones, the processes of manufacture have become so simplified, that almost any good mechanic, with a fair degree of taste, can be taught to make them in a very short time.

Dr. W. W. Allport, who is known wherever good dentistry is known, in a recent speech before the Alumni Association of

Rush Medical College, of Chicago, on "The Past, Present, and Future of Dentistry and Dental Education," remarked as follows: "About the same degree of anatomical knowledge should be required of the mechanical dentist that is expected of the painter, sculptor, or maker of artificial limbs; and more than this is scarcely necessary."

Sets of artificial teeth, set upon the metallic bases (gold and platina), of course require much greater skill than in the use of rubber and celluloid, but so few of the former are now made, that they are not worth considering in connection with our subject.

It is true that the restoration of "lost facial or oral expression is an art," but it is one which the designer of those beautiful blocks, made to be mounted on the plastic bases, has duly considered, and by his genius and artistic knowledge, has simplified labor and made it easy for a person of good taste and mechanical knowledge, to make and insert a set of artificial teeth that will almost, if not quite, defy detection.

With the simple manipulation now required of the dentist to mount a set of artificial teeth, are we still by it to "stand upon and be judged of our professional merits?" I hope not!

It is not fair to judge of the "professional merits" of an oculist by the excellence of a glass eye that he has inserted, or of an aurist, for the symmetry of a tin ear that he has adjusted, or of the surgeon for the comfortable truss he has fitted, and the cork leg he has supplied; or of the dentist for the artificial teeth he has *selected* and *adapted*. All the above-named appliances are best adapted to their purposes when adjusted by skillful hands; but does their manufacture require any other scientific or anatomical knowledge than such as can be speedily and easily acquired?

The manufacture of artificial dentures, by doctors of dental surgery, is a burden they cannot afford to carry, and just so long as it remains a legitimate part of their practice, the profession will be denied acknowledgment, and very properly too, as a specialty of medicine.

Dr. T. W. Brophy, in a clinical lecture on "Dental and Oral Surgery," says—"There is no doubt that dental surgery is a specialty of medicine, and holding that belief, we should at once take steps to place our specialty side by side with other special

branches of learning." . . . "Who are these medical men who have not considered their specialty of sufficient importance to carry their banner to the front, and place it in line with other specialties? None others than the doctors of dental surgery. I believe the time has come when we should cast off the scales from our eyes, realize our position, and immediately take steps to place our specialty where it belongs."

The best possible results can be obtained only by devotion to a single specialty; and, besides, the mechanical department is derogatory to the practice of operative dentistry, and incompatible with a profession.

The dental surgeon who is properly trained and educated to practice a profession, has no time, taste or inclination, to interfere in a business that properly belongs to the mechanic arts. His support should come from fees for professional services, and not from the sale of merchandise, or profits on mechanical jobs. His duty is to heal, and not to manufacture.

It is the mechanical branch that is responsible for a large share of dental quackery. Men sail into the profession, and into the confidence of a too confiding public, with no other knowledge of dentistry than that which enables them to extract the natural teeth, and make and insert artificial ones; and the great majority of those practicing as dentists to-day, have no other claim to the appellation. This ability to extract the natural and insert the artificial, without the other qualifications necessary for a thorough general practice, is well calculated to assist unprincipled incompetents in claiming what they are not, and, for a time, successfully imposing upon the community. People cannot easily discriminate between the capable and incapable dentist, until time has demonstrated the success or failure of operations; and as long as doctors of dental surgery continue to acknowledge mechanical dentistry as any part of their profession, they must bear the responsibility of dental quackery.

Whether "that *time* is not *yet*," when operative shall be divorced from mechanical dentistry, I have not ventured an opinion, but I do assert in defence of my position, as set forth in the preamble and resolutions, that "the Chair of Demonstrator of Mechanical Dentistry," in the Dental Department of the Michigan University, *should be abolished*. If "that *time* is not

yet," it must soon come, and it *is time* to begin to make the preparation.

When our Dental Colleges abolish instruction in mechanical dentistry, doctors of dental surgery will cease to practice it. Then the practice of operative dentistry will be *professional*, and the medical profession will extend a cordial welcome as one of the specialties of that profession.

Before stopping let me correct an inadvertent statement in Dr. Rehwinkel's correspondence, in your April number. He says of my resolutions—"Their promulgator begged leave to withdraw them," while the fact is, their author moved to lay them on the table, which was carried.

REMOVAL OF THE INFERIOR DENTAL NERVE.

REPORTED BY DR. A. G. ROSE, CINCINNATI, O.

DOCTOR P. S. CONNER, well known as a surgeon of Cincinnati, ably assisted by Drs. Ransohoff, Cilley, and E. W. Walker, removed a portion of the inferior dental nerve, to relieve the patient (a man) of the terrible pain of that dread evil, *tie douloureuse*, from which he had been suffering for a year. For two months preceding the operation, the largest doses of morphine had no effect in deadening the pain; and every movement of the muscles of the face, or of the body, caused terrible agony.

Instead of trephining, as is usual, Dr. Conner, after making an incision of an inch and a half in length, at the angle of the jaw, dissected up the periosteum, and cutting a portion of the bone, about a half inch square, turned it aside, leaving it still connected by periosteum, thus affording a good opening into the nerve canal, then, by cutting down, through the mouth, to the mental foramen, and severing the nerve at that point, the detached portion of the nerve was removed.

The object of this unusual operation was to preserve the bone, which was replaced in position, covered by the periosteum. The operation was completed by the insertion of drainage tubing, and the stitching of the wound.

RESULTS:—1. In relieving the pain, the operation was very

eminently successful, the patient, thus far, having had no recurrence of the trouble whatever. The relief is complete.

Dr. E. W. Walker, pathologist of the Cincinnati Hospital, made a microscopic examination of the portion of the nerve removed, and found it perfectly normal.

The operation was performed, under the influence of ether, in forty-five minutes.

2. At last accounts the piece of bone was still in its proper place, though there had been some suppuration; and Dr. Conner was undecided as to the ultimate result, but expressed the opinion that the bone would have to be removed; stating, also, that in similar cases, hereafter, he would perform the usual operation of trephining.

ETHICS OF JOURNALISM.

BY W. H. ROBINSON, D.D.S., SUISINE, CALIFORNIA.

OUR Dental Journals sustain a very important relation to the profession. They are its great media of communication, and interchange of ideas. Their literature is the best exponent of the profession's culture and attainments. If the world wants to know what kind of thinkers, writers, and workers, compose the Dental Profession, it looks at our journals. If those in other professional pursuits want to know who and what they are, they look in our journals, and see, reflected there, our true status as scholars, scientists, and investigators. In our journals are written plainly our moral, social, intellectual and professional attainments.

Our journals are the great text books and educators of the profession. Without them we would be isolated empirics, knowing little of each other as co-workers, and learning little from each other, except in such a slow way that, without them, the profession would not advance as much in a century as it now does in a decade. They are welcome visitors to our offices, and true counsellors and real friends. Their pages are letters from our friends all over the world, telling us what they are doing and saying. They are better than we can tell, in many respects, and

not very good in other respects. As a rule, our journals are the property of private individuals, not even members of the profession. So far as their publishers are concerned, the main object of the Dental Journal is not to dispense literature, but to advertise dental material and *apparati*. This they have clearly a right to do; and the enterprise and ingenuity they display in their advertising pages, show shrewd business ability, but rather a low grade of professional ethics. I open one of the journals on my desk, and, by actual count, find fifty-five pages of literature, and sixty-seven pages advertisements; and at least ten pages of what I have called literature, is an able essay, illustrated with articles made and sold by the publisher. I take another journal, and find reading matter thirty-nine pages, advertisements forty-four pages. These journals rank as high as any published. Much that is in the advertising part is beneficial to the profession, as well as the publisher and manufacturer. We often find these advertisements very useful. We see there what we need, the price, and where to get it. One thing is certain, the advertising pages do not come under our code of ethics; nor do they have much regard for the ninth commandment. Most certainly those who write some of the advertisements have a fine command of language; and don't they tell us some big stories? It would be an interesting phase of human experience were some of these advertisement writers to tell us the sensations that are registered in their sensorial consciousness when they are writing an advertisement of which they do not believe a word themselves, and certainly must know their readers will not believe a word they say. Another amusing thing is to see the names of so many men, eminent in the profession, signed as vouchers to the wonderful virtues of compounds, machines and things. Amalgam seems to be an article that can stand an astonishing amount of blowing. Each maker seems to act toward his product as the old lady did toward her son, on whom she bestowed an annoying amount of fulsome praise, and when remonstrated with for so doing, replied—"Well, you see, I must do it myself, for no one else will!"

"Gold and Platinum Alloy, the best in the world; composed of chemically pure metals. It will not shrink or corrode. It gives the best satisfaction to patients. Price, only \$2.50 per ounce." Of course, dentists know so little about the value of gold and platinum that, when they read such advertisements,

they believe some very generous manufacturer makes a compound of gold and platinum, and sells them an ounce for \$2.50.

We count about twenty kinds of Amalgam! *Each* one the best! All possess such special and peculiar virtues, that no one but the man who writes the advertisements ever discovers them. We might go over a list of dozens of obtunders, retainers and compositions, and they have such wonderful merits, virtues, absolutely past finding out by any one, except the makers and recommenders.

Another strange thing is to look over the long list of Profs., M.D.'s, D.S.S.'s, and plain Drs., that endorse these wonders, and vouch for their virtues. Many of these men are honest, and the things recommended have merit. But—but how about the respectable names that tell big stories about wonderful virtues that nobody but themselves ever can find out? We are not going to censure the publishers or writers too severely. Readers know that they are not expected to believe such things, so they amuse us, and do little harm. Journals claim no jurisdiction over their patrons' advertisements; and as their columns are their own, they may insert what they please. We said before, our journals are the representatives, the exponents, the epitome of the highest attainments of the profession. As the professional man is bound by his honor and position to refrain from the clap-trap advertisements that Cheap John and Peter Funk adopt, its journals are bound by the same law. Our journals, as a rule, are well worth the subscription price; most of them are worth a great deal more. We look at the prospectus of one, and are told it is the leading representative journal of the world; and it piles climax on climax in telling about its original communications, reports, etc.; price \$2.50. Now, the inference of the reader of any intelligence would be that the journal was worth the money. But, evidently, the publisher has a different view, for he adds—“*Grand* premium! We give every one who subscribes for our journal half an ounce of amalgam, worth \$2.50; or wheels, *disks*, caps, dams, etc., etc., etc., worth \$2.00!” Or, if you will buy some books, the editor wrote, we will throw in the journal free. Another publisher bids still higher in the premium list, and says: “If you will buy our various articles named, at the common price, \$3.00 or \$4.00,” as the case may be, “we will give you the journal for nothing.” Another journal, in its premium list, says

it will give you \$2.50 worth of stopping, or fixtures, or rubber, if you will give \$2.50 for the journal. One thing is certain, such goods must be very dear, or journals very cheap. Such bombast may do for sensational novelettes, but when publishers virtually say, our journals are not worth the subscription price, our readers are too ignorant to appreciate or subscribe for them, for their inherent worth or merit, so we will hire them with some cheap amalgam or rubber—amalgam and rubber are things our readers appreciate more than professional journalism and literature. Such procedure seems to us so unmanly and unbecoming, that it would require extra strong tints to show it in its true color. Perhaps some publisher may respond that the literary culture of the profession is so low, that they have to titillate our æsthetical palates with amalgam or rubber, to give us an appetite for any mental pabulum. Perhaps there may be a little truth in this—possibly a good deal of truth. If so, Editors, as the bright particular stars in the dental firmament, whose scientific scintillations are supposed to illuminate all the dark cranial corners, should be the last to get down to the level of the lowest; they should lure to higher planes, and lead the way. If dentistry can lay any claim to rank as a learned profession, such claim is greatly weakened by the very unprofessional and undignified way our journalism is conducted. What would we say to the dentist who would advertise to give a premium of a book, or pictures, to every one who patronized him to the amount of a few dollars? What shall we say to our professional journals and their erudite and dignified editors who, so far as modes of advertising can do it, place themselves and their journals on a par with the lowest advertising quack and his nostrums? We say, to the general sentiment that is so often expressed about elevating the profession, “Amen!” We also say, let us be so liberal in our application of means, and diffusion of principles, that are supposed to lead us higher professionally, that our publishers and journals will get a share. The business of the Editor is to instruct the profession, and watch over its interests. Our *say* to them was aptly expressed by the little boy in his evening prayer, when his father was absent, “Lord, watch over papa; and please keep an eye on mamma, too!” Watch over the profession; and please keep an eye on your journals, too.

UNHEROIC TREATMENT OF ALVEOLAR ABSCESS.

F. W. SAGE, D.D.S.

DR. GEO. WATT: *Editor of the Ohio State Journal of Dental Science.*

DEAR SIR,—I am about to offer for the consideration of your readers, especially the young practitioners (who are supposed to be the only ones in need of practical suggestions), a few of the results of my observations as to the treatment and cure of alveolar abscess, with its various complications of necrosis (of the root alone, or of the process also), caries, calculary deposits, etc. It has seemed to me that the various treatises in which this subject has been repeatedly discussed, have, in a single respect, fallen short, perhaps without exception, of that definiteness as to the varied phases in which this lesion presents itself, and as to a statement of the precise remedies indicated, the strength in which they should be used, and the manner of their application. This assumption, if admitted, may be accounted for on the presumption that the subject trenches so naturally on the considerations of etiology, pathology, and physiology, that, in their consideration, the minor details of treatment have not been thought worthy of minute elaboration. Exactly what to do when a dead pulp has been diagnosed, and the most effectual way to do it, is a matter of some considerable importance, as, upon the proper handling of these cases depends the question whether our patients shall rest at peace in their beds, or pass their nights in intolerable anguish. It is unfortunate for us of the profession, and doubly so for our patients, that they cannot always be convinced by a word of the importance of prophylactic treatment by constitutional remedies. Your patient comes in with his head bandaged: "Oh, doctor, I have passed a horrible night. The swelling got worse from the moment you touched the tooth!"

"Did you use the Dover's powders?"

"N-no!"

"You found the hot foot-bath, and the mustard plaster on the nape of your neck, of no avail?"

"Oh, I was out skating all the evening, and never thought about those things."

"You asked the doctor to give you a mild cathartic, of course?"

"Why, no, I did not do any such thing. Did you say that I was to do that?"

If these errors of negligence involved only the discomfort of the patient, we might, in instances like the above, compose ourselves to a reasonable degree of philosophical resignation, but unfortunately they entail upon us the necessity for much patience and pains-taking, to avert the consequences of our patient's folly. Hence it follows that he who can by well-timed, delicate, judicious operating, manage these cases so skillfully as to avoid the necessity for any other than merely topical treatment, merits the highest commendation. We consider first the case of an incisor, in which we find the pulp in a dessicated condition. There is no fistula in the gum, apparent. We can hook out only minute fragments of dry pulp. There is little or no offensive odor. The canal is small, but we will not drill it for the purpose of enlargement. It is stated, on high authority, that such treatment results in necrosis of the root, *invariably*.—(Garretson). In some instances, it becomes necessary to thrust a spear-drill through the apex, but the canal should not be reamed out. Now we proceed further. Having introduced a perfectly clean broach, and hooked out as much of the debris as possible, we swab out the canal repeatedly with the smallest amount of cotton that can be made to carry a drop of glycerine into it. The important thing to be avoided is the thrusting of the point of the broach through the apex. Nor should enough cotton be used to form a piston, which may force the glycerine through. Our aim is to wash out only the debris, at present filling the root, by very gently insinuating the cotton, and allowing it to become soaked with the fragments of softened matter. The glycerine is a powerful solvent, and loosens the debris. It also operates to open the sealed-up apex, so that, if decomposition beyond the apex should recommence, as it frequently does, the pus may drain off through the opened root, and thus the much dreaded swelling of the parts be avoided. Having repeatedly wiped out the canal, as described above, we dismiss our patient for a day or two, leaving no cotton nor other stopping in the root. It will be noticed that we have thus far used only glycerine.

Now, what have we accomplished? We have cleansed the

canal, and introduced enough glycerine to render it reasonably sure that the debris choking the apex, which we have so carefully avoided penetrating with the instrument, will be dissolved away. The glycerine is slightly antiseptic, also. But why not use carbolic acid at once? For several reasons: First, instead of penetrating and loosening, as glycerine does, it forms a coagulum, and thus defeats the very important end we have in view of draining off the contents of the sack mechanically. The manner of its use tends to aggravate the difficulty. It must be pumped through the apex by forcible effort, driving the debris, which plugs the opening, before it. Or, if the drill has been employed, it is maintained that some portion of the debris has been carried before it into the sack, producing irritation. We are inclined, however, to dissent from this view, and to attribute the inflammation, which often follows this manner of forcing an opening, and the injection of carbolic acid into a blind abscess, to the fact that the pus in the sack not having as yet been evacuated, the acid tends to coagulate the entire mass, which, as may be surmised, would be more likely to cause trouble than if the contents of the sack had been allowed a reasonable time to drain off before the acid was introduced. It needs no very extended observation to assure any one that the parts beyond the apex of the root are, when this morbid condition exists, exceedingly sensitive, and likely to take on inflammation if distended, as they must be, by forcing anything into the sack already filled with effete matter. We must give the sack time to relieve itself.

At the second sitting, we usually find an exudation of pus into the canal. Drain that out as before. No medicine is yet required; we dispense even with the glycerine this time. Experience only will enable us to determine whether or not the amount of matter discharged indicates that the contents of the sack are quite evacuated. It may be left for another day or two. This time we fill the root loosely with cotton.

At the third sitting—sometimes, however, at the second—we gently pump carbolic acid through the apex, using but little force. If we can succeed in flooding the entire periphery of the sack, that is all we desire. A single drop will do that. It should be remembered that this agent is a powerful irritant, and, when concentrated, a corrosive poison. It should never be injected but once, and then let it be thoroughly well done. Its use may be

supplemented, if necessity for further treatment seems indicated, by an injection of sulphate of zinc—one to three grains in a fluid ounce of water. This acts as an astringent and stimulant. If blind abscesses be carefully and gently treated by the above means and methods, the necessity for making a counter-opening through the gum and process will seldom occur, unless the trouble be accompanied with necrosis, or caries of the maxilla. The treatment for uncomplicated cases, where a fistula exists, is, in all its details, similar to that given, excepting that the glycerine is at once forced entirely through, and immediately followed by the copious use of carbolic acid, or this acid combined with iodine. A few drops of glycerine added to a two ounce phial of carbolic acid greatly increases its penetrating powers. In blind abscess, if it seems necessary to enlarge the foramen in the root, let it not be done until the glycerine has been allowed a trial of a day or two. Use a drill that cuts only at the point. A very slender watch maker's broach, dressed down on a Scotch hone or an Arkansas stone, and properly sharpened at the point, answers the purpose admirably.

So much for the avoidance of heroic treatment. If time and space allowed we might consider the demoralizing effect upon our patients, and the consequent reflex demoralizing effect upon our pocket-books, and of the many needless inflictions which are practiced upon a confiding public. Only this we plead: Let heroic treatment be dispensed with so long as mild measures can be made equally effective. The writer maintains that the operation of probing the sinus, and breaking up the sack, through the opening in the alveolus, is usually unnecessary. The introduction of a fine probe through the fistula and bone, so as to penetrate through the sack and afford an exit for the accumulated pus, may be required; but the tearing out of the sack, under what seems to be a vague conception that it somehow constitutes the germ of the disease, is unphilosophical.

In conclusion of this branch of the subject, it is our candid belief that the opinions frequently reiterated of late in our journals, to the effect that a large proportion of our so called radical cures of abscess are in fact only ameliorations of the disease, are well founded. But what of that? What if we urge, in palliation of our shortcomings, that our patients can not be made to regard the salvation of a tooth as of equal importance with the

salvation of a limb ; that we can not send them off to the mountains or sea-shore to recuperate wasted energies, and tone up the system to a pitch that will enable it to throw off the incubus of the disease ? What if our recommendations of chalybeates, or quinia, or what not, be disregarded ? Have we not, after all, triumphed, within our special province ? Have we not, in a large majority of cases, fulfilled our promises of restoring the diseased organs to usefulness, and established a condition at the end of the roots which enables nature to tolerate what else would have been intolerable ? The physician recognizes conditions of disease which he can never hope to perfectly cure. A gland becomes diseased, fills up with pus ; he poultices, lances, treats to stimulate resolution, anticipating all the while indurations which will ever after mark the seat of disease, and failure, partial or complete, of function, to be to him a reminder of the insufficiency of medical art. So then, let us not despair if our best efforts fail of accomplishing all we could wish. If we cannot always kill the snake, we may very effectually scotch him, at least.

[TO BE CONTINUED.]

Correspondence.

"I charge you that this epistle be read."—PAUL.

Editor of the Ohio State Journal of Dental Science.

I have read with pleasure the specimen copy of the OHIO STATE DENTAL JOURNAL sent me. Most of the contents pleased me very much, particularly the letter of F. M. I wondered much that any man could offer such a resolution as was offered at the meeting of the Michigan State Dental Association, which was subsequently laid on the table, in regard to the chair of mechanical dentistry. I find a lamentable amount of ignorance in students of one, or even two years in preceptors' offices. They know but very little, as a general thing, about dental art and mechanism. The most they know is how to vulcanize and finish a rubber denture ; and as for taking a proper impression, or articulation, and grind-

ing up a set of teeth, it is quite beyond the most of them. And as for getting up a metal plate, you might as well ask them to speak Greek; and yet a respectable dentist wishes to abolish the chair of mechanical dentistry in our colleges. I have heard others remark, with F. M., that that branch of the profession was advancing backward. At best it has stood still; and what is the reason? I answer, rubber. It has done more to debase the profession than anything else; but, 'tis said, there is no demand for anything better. I answer again, it is the fault of dentists—they are the educators of the people, and if, through ignorance or laziness, or both, they advocate vile rubber and celluloid, they, and not the people, are to blame. They are supposed to be economical; I don't see it; for the cases are rare that have been worn more than five years. Properly made dentures on gold or platinum will last twenty and thirty years. I know of quite a number that are as perfect now as they were a score of years ago, the mouth healthy, with but very little absorption—not enough to affect the set of the plate—and good for another score of years. Now take a denture on rubber, worn five years, and in the majority of cases, the mouth is inflamed, flabby, the alveolus nearly absorbed, the plate filled with mucous membrane, which *wobbles* all over the mouth, and a deposit under the blocks, making a perfume very easily detected even with the best of patients. I contend that rubber is not fit, never was and never will be, for a base plate. Celluloid is not much better, though for temporary dentures, with single teeth, it can be made to restore the contour of the features quite as well as continuous gum on platina, or carved teeth. But how many of the innumerable sets of teeth we see worn attempt to restore the expression of the features? Very few, indeed. It is almost impossible to do it with rubber and pressed block teeth. Poor people must have them, perhaps, but the better class would have something better if *dentists generally* advised it. I believe that metal is the proper material for base plates; and the dentist who cannot make a proper denture on metal, or save teeth with gold filling, is a very poor one, in my humble opinion. Some are afraid to soil their fingers with laboratory work; think it degrading—forgetting that to cultivate their mechanical skill will make them the better operators. As far as skill goes, it takes far more to make a proper denture on continuous gum, than it does to build a tooth with cohesive gold. At least, that is my experience

after thirty years practice. I know it is rank heresy, and will hurt somebody's feelings; but I think I can prove the fact. The training a student gets in a well appointed mechanical laboratory, where something is taught besides rubber, where teeth are carved, and continuous gum work is made, will teach him *æsthetic* dentistry. Every dentist should be able to carve his own teeth. Teach the students; let them learn on artists' clay. It will help them wonderfully in all their work and operations. I hope to see the man of talent wake up to the needs of dental art and mechanism. It has been in the mire and slough of despond long enough. Let them demand better teeth, in form and color, than are now made for the *trade*, and they will be made. But as long as men make false teeth for the dollars only, just so long shall we see the horrible looking things that disgrace the mouths of unfortunate humanity. Excuse this long letter, but I wish to strike a blow for the much abused mechanical dentistry.

N. N. N.

Boston, June 6, 1881.

“VITALIZED AIR,” ALIAS NITROUS OXIDE GAS.

Editor of the Ohio State Journal of Dental Science.

Allow me to tax your patience and forbearance enough to occupy a little space in the JOURNAL. I have been asked, both by letter and personally, to write something on the subject of “Vitalized Air.” The name for a new anæsthetic will sound as strange to every dentist at first as it did to me. A well-informed dentist will naturally inquire, What is it? The dental journals say nothing about a new anæsthetic; the medical journals say nothing about a new anæsthetic; the dental societies have discussed no new anæsthetic; what can it be? A few words of explanation, and the great mystery will disappear:

About six months ago I wrote to one of our representative dentists, who came in contact with it before I did, for light on the subject for myself. I received the following answer: “‘Vitalized Air’ is nothing more nor less than nitrous oxide gas; a new name given to it by quacks to deceive the public.” The statement is good and true so far as it goes, but the real inwardness of the “system” was not so well known then as it is now. I cannot do

better than to copy *verbatim* from the advertisement of a dentist who has purchased the "system" — "Dr. ——— having bought the exclusive right to use Dr. ———'s system of extracting teeth without pain, for the towns of ——— is now prepared to operate on all troubled with toothache or requiring plates prepared with vitalized air." The exclusive right consists in a patented apparatus for giving nitrous oxide gas. Now, every dentist who has the honor of his profession and the good of his patrons at heart, will welcome any improvement in the manner of giving the gas, but why the new name for it? The apparatus, only, could be patented, the gas could not be any more than ether or chloroform could. Then why change the name? The profession, as a class, are slow to adopt patents until their value is assured, and this, perhaps, is one reason. Then a demand must be made for it by the people. They are not so enlightened on the subject of anæsthetics as the dentist. Their credulity is capital well invested. Change the name, then the patent apparatus can be sold; and so for a time deception wins. Is it not strange that dentists are found to be willing parties to such deception? Alas! for the profession that one of the name should be willing to *sacrifice his professional honor for money*. But the deception does not end here. This is the great secret: A little reservoir containing chloroform is so attached that the chloroform commingles with the gas as it passes to the patient for inhalation, in order to hasten insensibility. The patient is not advised of its danger, is not questioned or examined, but, on the contrary, is told that it is perfectly harmless. Astounding! that a dentist could so wantonly endanger life or even business prospects! In my own experience, the physicians have acted very honorably, and have condemned the mixtures as soon as the real fact came to their knowledge. And surely we, as representatives of a profession that ought to walk side by side with the medical profession, should be willing to do as much. Nothing in my twenty years of experience, has come to my knowledge that has so degraded the dental profession. If physicians must stand as judges between their patients and the dentist, they will consider us unworthy of confidence, and the breach already existing will grow wider.

That bad results should soon follow the use of such a mixture in such a manner, is not to be wondered at, and although no death has occurred many cases are known of such an alarming and dan-

gerous character that even the public journals are calling a halt, and inquiring, "What is vitalized air?" "Is it dangerous?" &c., &c. At least three cases have come to my immediate knowledge in which death nearly arose and bad consequences remained for weeks afterward.

The dental profession is thoroughly informed on the subject of anæsthetics. The light, and help and warnings, that have come from your own worthy pen, are yet fresh in our minds. Pure nitrous oxide gas is the only anæsthetic that the dentist ought to use, and it cannot be said to be perfectly harmless, and many of our best dentists are not using even it. Nitrous oxide gas and ether, as a mixture, have been experimented with, but with not very favorable results, and yet but one death at least is recorded; but to use chloroform, in any way, by the dentist, in a dental chair for extracting teeth, is certainly very unsafe practice; and the dentist who persists in its use will not long hold the protection and sympathy either of the profession or the public.

Now, my dear editor, this much I have written, that the dentists of this State and elsewhere, may know something of the "Patent Apparatus," and "Vitalized Air," when it is introduced into their field of practice. Some may be prevented from being victimized, and from the failure that will surely come, from trying to secure business by unprofessional advertisements, or any unprofessional means. C.

CINCINNATI, May 25th, 1881.

[This was written for the June number.—ED. JOURNAL.]

Editor of the Ohio State Journal of Dental Science.

DEAR SIR:—Every now and then I feel like having a little quiet gossip with you, but then, when I do, you send off and have it printed—just tell the other fellows all about it. Well, I will try you this time.

Was I at Rock Island?

Yes, sir! and at Davenport, too! and had a grand good time. How so?

Why the Illinois State Dental Society met there on the 10th inst., and the succeeding three days; and the Iowa State Dental Society met at the same time in Davenport. The Illinois

Society had from 90 to 100 in attendance, and the Iowa from 60 to 75. The truth is, there were so many I did not count them.

The bodies, for the most part, met separately, but they had union meetings two or three times, which all seemed greatly to enjoy. In the regular meetings there was a great amount of excellent work done. This you will understand fully when I tell you that there were present in the Illinois Society, Dean, Cushing, Black, Harlan, Brophy, Kitchen, Laurance, Hurtt, Magill, Morrison, Mattison, Swain, Talbot, Davis, Noyes, Stone, Herrington, Rohland, Freeman, Miles, and others too numerous, &c.

And in the Iowa Society, Ingersoll, Wilson, Hardman, Rathburn, Townsend, Hunt, Fuller, Hughes, Kulp, Kulp, (not twins) Jackson, Dickinson, Cutter, Baird, Eaton, Garber, and many more. And in both Societies, Spaulding, McKellops, Morrison, Eames, French, Templeton, and another fellow. Now you will see, from the few names here given of those present, that there was more talent than could be taken care of, far more than could be used in two towns in the brief time of four days.

The time was well used, however. It would be impossible to give even a sketch of the work done by the various members of the two bodies. Suffice it to say that the whole time was crowded with interesting and instructive matters; and even some of those who were present as visitors, had prepared and presented important subjects. Spaulding, Eames, and Morrison were noticeable in this respect.

And now, in a whisper, I will tell *you* what I found out, and that is, that brother Spaulding believes in everybody having a mission, and in the fulfillment of that mission (so do we). He also believes in the perseverance of the saints (so do we). And *we* believe that he is one of the saints. On the way to Rock Island, I passed through and stopped a few hours in a place bordering on Lake Michigan, called Chicago. I knew it was Chicago by the size of it, (it covers the north end of the state of Illinois) and by the people, and what they *said* (they said it was Chicago). What a grand state Illinois is; nobody but a blind man could travel through it without having his ideas enlarged, and his views expanded. No one has completed his travels till he has visited Illinois, especially the north end of it. Yours, J. TAFT.

Editor's Specials.

"Wisdom is better than weapons of war."—SOLOMON.

SELECTING AND ADAPTING ARTIFICIAL TEETH.

Nothing else pertaining to dentistry requires so high a degree of talent, genius, cultivation and skill as the selection of artificial teeth, and the adaptation and adjustment of the same. The size, form and color of the teeth lost give no light whatever to aid in selecting substitutes for them; for often the natural teeth are the leading element in hereditary deformity.

Let us suppose that a youngish wife and mother has had the misfortune to lose her dental organs, and has artificial substitutes inserted. Her looks may appear natural both to acquaintances and strangers. The expression of her countenance may be satisfactory to herself, her husband, her children, including the babe, her brothers, sisters, cousins, aunts, and even her mother-in-law, and her dentist. Or her smiles, having degenerated into grins, may frighten her babe and disgust her older children, so that they cannot endure the shock of a good-night kiss; may cause her most gracious presence to become repugnant to her friends; may cause the home visit to bring sorrow to her mother's heart, and tears to her eyes, as she looks at the ghastly countenance of her loved daughter, whom, but a few short years ago, she had proudly sent away laden with a mother's love, and bedecked with bridal beauty, and blessed with the benedictions of parental fondness. And no one untried can appreciate the mystified mortification of the fond mother as she watches and wonders at the change in the appearance of her darling daughter, not even suspecting that all the trouble has arisen from the fact that the dentist, through lack of science or want of conscience, has put into her mouth teeth that were made for *Mr.* Jones or *Mrs.* Smith. Her poor husband sub-

mits, with all the meekness of Moses, as to the inevitable; yet all the time he feels that a sad transformation has occurred, and that somehow he has lost the looks and the laugh that smilingly led him along through the pathways of love's young dream, and left him, laden with love, amid the roses of marital bliss.

Mr. and Mrs. Smith lost their teeth in the early years of their married life. A dentist filled their mouths (almost literally) with artificial substitutes, composed of most beautiful teeth carefully and securely attached to plates; and Mr. and Mrs. Smith seem as strangers to each other the rest of their lives. The teeth are beautiful, but do not become them, and they never become reconciled to each other's appearance. Mr. and Mrs. Thompson get artificial dentures, and they respectively enjoy all the endearments of early love, because the personal identity of expression has been preserved in each, and not because the substitutes are like their predecessors in form, size and color, but because they become Mr. and Mrs. T. The difference in value of these two operations can not be financially expressed. The man will not sell the wife of his youth; nor, if a man, will he lose, through a false economy, the smile that allured, nor the expression that captured him, when love was young. The true dentist will retain these, or restore them, if lost, while the Cheap-John Bungler will blot them out forever.

The principle involved here can be clearly illustrated by the history of a

CASE:—In 1857 a young lady teacher lost six upper front teeth. Substitutes were inserted on a gold plate. In the summer of 1858 a lateral incisor was broken off by a fall. She brought the plate to the writer for repair. We told her to call in an hour as we wished to try the plate in. The remaining five teeth were cut off, and when she returned others were adapted. When finished and placed in her mouth she went to a mirror, and in a surprised exclamation said, "Why, they look better than ever! Who would have thought one new tooth would have made so much difference?" "Perhaps more than one are new," was the reply. "Why, yes," said she, "they're smaller." "Same size," we replied. "They're whiter," said she. "Same color." "Well, there is some difference, and what is it?" said she. To which we replied that she had worn her brother's teeth long enough, and we preferred to have her use her own. She had never been quite

satisfied before, yet supposed nothing better was attainable; and her friends had the same feelings in reference to her teeth; yet now all were delighted. Her first artificial teeth had been selected and adapted by a leading dentist—a man whose fame is as wide as civilization, and was then, yet he had not the talent and skill necessary to select artificial teeth.

All that is involved in the human face, features and countenance must be understood as preliminary to the science of selecting artificial substitutes for the natural teeth. The variations are almost infinite; therefore the talent must have a wide range. The talent for this duty can be cultivated. It can not be taught; and far less can it be created. However, the teacher can do much if he is earnest and enthusiastic in the way of arousing the proper talent, when it exists in his pupil. But very little attention is given in this direction by a great majority of dentists. In our brief experience in selling dental goods, we were often surprised to see an inexperienced pupil come to the depot to select teeth for a full or fractional denture, his only guides being a plaster model and a broken tooth. He had never seen the patient, but was expected to be successful as to size and color from the data given, all other points being regarded as unimportant. The preceptors of these pupils are usually in favor of subdividing dental surgery, as it lowers their professional feelings to do the things they intrust to the office boys.

Supposing that the dentist has thoroughly studied the anatomy of the human face divine, and then its physiology and pathology, he has yet to study the individual case before him. A varied and animated conversation with the patient is necessary that he may catch the various facial expressions. This conversation is a very difficult part of the process. The patient must be all unconscious that she is a subject of the closest scrutiny. The slightest suspicion of criticism renders all expression unnatural. Again and again must similar expressions and facial attitudes be called out, till they are memorized. The mental strain is great, as the mind must act with vigor in two directions at the same time. The conversation must interest the patient, or only expressions of discontent will be manifested, yet the criticism must be as deep and as close as if it received undivided attention. And, now, if at all possessed of the necessary genius and talent, while the inspiration of the described interview is on him, the dentist is ready to select

the teeth for his patient. And if properly endowed and duly inspired, he can draw out a tray and know, at a glance, if there is nothing in it to suit his patient. He may rapidly look over sets of teeth, till, suddenly, he is so impressed by a set that he feels like saluting it with his patient's name. And teeth thus selected on the "Good morning, Mrs. Jones," style, always give satisfaction. And in the minds of some of our profession, all this is so low, so unscientific, so degrading, even, that true dentists must wash their hands of it, turn it over to the Cheap-Johns, the students, and the traveling Jacks, while they scientifically and professionally bore holes in ivory, with a crank organ, and manufacture lumps of gold to fit them, or press them full of paste, with putty-knives.

Nor is it intended in the use of such language to speak reproachfully of operative dentistry, but to show that in the play of epithets the æsthetic or artistic side need not be second fiddler. Dentistry, whether operative or mechanical, is what its advocates and practitioners make it. Much of the hue and cry against the relative standing of mechanical dentistry is due to the introduction and use of rubber. A boy can learn to boil this by an experience of a few weeks, and he can persuade some that he is a dentist, and thus impose his wares upon them. But he can learn to commingle metallic filings with mercury quite as readily, and he can learn to press his mercurial putty into cavities of decay as readily as he can learn to take impressions. The high road to quackery is as short and as well paved for the one as for the other; and it is not possible that the rubber quack can be held in lower esteem by the true professional man than is the amalgam quack.

Dentistry, as a unit, has sprung into a vigorous existence. As a unit it has prospered to the extent of periodical literature worthy of any profession, to colleges, text books, associations, etc. No one can intelligently divide this unit. When it is proposed to strike off mechanical dentistry, where shall the line be run? Pivot teeth? Their insertion is a *mechanical* process even though performed by an *operator*. Filling teeth? All that is manipulative here is strictly mechanical. Better strike off operative dentistry then. Let it include all that is anatomical, physiological or pathological. The selection of artificial teeth left out? But we have seen that that requires the highest possible attainments in these standard

sciences. Adapting teeth? But we have seen that this is in the same rank. Better at once conclude to be orthodox, and say "What God has joined let not man put asunder."

On a western steamer were a wealthy couple unblessed with offspring. On the same vessel were a poor man and wife with a dozen children. The wealthy pair proposed to adopt one of the children. One was selected and kept over night; but in the morning came the mother to propose an exchange. That one was so like its father she could not spare it. Another was selected, but soon the father recalled it, it was so much like its mother. A third was selected and soon both parents came to reclaim it, "for it looks some like both of us." The aged couple gave up in disgust; and we would better do so in reference to the division of dentistry.

"JOURNALISTIC."

UNDER this caption, a contributor to the *Missouri Dental Journal* has a little to say about one of our articles on nitrous oxide. We would not stop to notice his effort but for an insinuation that, if left to itself, might cause misapprehension. He says, "We were not in the editor's sanctum when he wrote this article, but we are willing to wager a big apple that he had the *Dental Cosmos*, for December, before him when he wrote this particular paragraph." And then he quotes our thoughts about positive assertions by parties who have not investigated the subject in hand, though well posted on other matters. Now, we had no thought of the December *Cosmos*, for, in deference to our aches and pains, we had not read it; nor had we any journal in view. They were all as unhandy as "L's" Bible, which he tells us was "not handy," and that he therefore was "at a loss to know just what" Rabshakeh's proposition was. And we are sorry to find his physiology and chemistry are not more handy than his Bible. Hence, he indulges in some pleasantly wild statements, as thus: "Some years ago experiments with this gas were very common, and such experiments negatived in every particular the theory of its decomposition in the system." But our observation is that the most carefully conducted experiments, by the most competent experimenters, teach exactly the opposite. And the same is true of the experiments conducted by the late Prof. Thos. Wood and the

writer. Our experiment with the terrier is conclusive. We had no desire to deceive or be deceived. Like the writer, Prof. Wood was possessed of a high order of mechanical talent. We felt competent to so fix our appliances that the little dog could breathe only as we gave him opportunity. A conical tube of very soft rubber was drawn over his nose; portions were cut from its margins, so as to expose the eyes; a smaller tube was attached to the conical one, beyond the tip of his nose, the joint being cemented; this tube was joined to a Sprague inhaler, with air-tight valves; the whole was inspected and found to be air-tight. The sides of the dog's mouth were held together by clamps of wood, brought together by thumb-screws, the clamps grasping both the rubber and the lips. For a few minutes after the gas was let on, we allowed the dog to breathe air frequently—till the respiration was calm and tranquil. Then, at 11 A. M., the air was rigidly excluded, and the dog was required to breathe the gas until 12 M. During this hour we saw no evidences of asphyxia. Sometimes the pupil was dilated, sometimes not. Sometimes the dog was conscious, sometimes not. Something supported his respiration, for, in less than two hours after his release, he killed over seventy rats.

Prof. Wood, after this, testified, in a case of a suit for malpractice, that if a patient were left breathing only nitrous oxide, he would return to consciousness, so as to be able to take care of himself, even though fully anæsthetised when left. He had many others beside the terrier experiment to sustain his statement.

We may be quite unable to persuade others that nitrous oxide supports respiration to any extent, yet we, through misfortune, know that it does. A few weeks ago we wished to have a deep-seated, burrowing abscess opened. We laid a bistoury beside the chair, sat down and breathed nitrous oxide to complete unconsciousness. As soon as consciousness returned, we seized the instrument, thrust the blade into the tumor to the depth of an inch and cut out, and this without the slightest pain. Now, can any one believe that we could have thus calmly operated on our own body if we had breathed only nitrogen or carbonic acid the same length of time? If he can, we shall regard him as the "true believer," even though it may not follow that his belief is saving faith.

For the simple purpose of determining whether nitrous oxide can, to a limited extent, support respiration, we regard the terrier experiment (in which we had the co-operation of Prof. Wood) as more conclusive than any other on record. Many tried for the same purpose, demonstrate only that warm blooded animals can be smothered in their own excrements.

PERSONAL.

IN conducting the JOURNAL thus far we have almost introduced a "new departure" in dental periodical literature. All that has appeared in the JOURNAL, except three or four pages, was written expressly for it. This is not as we expected, yet we can't say not as we wished, though certainly not as we intended. We thank our friends who have so kindly aided in contributions from their pens. We thank them much more earnestly for the quality than for the quantity of their effusions. Yet, with all its fine quality, the literature has flowed in in such quantity that more than once it has been found necessary to enlarge. And this is all the more strange and gratifying in view of the fact that we came nearly unannounced, our first appearance being almost a surprise to the profession.

But a change is proposed. We expect to use carefully selected compilations to a considerable extent, in some of our future numbers. We propose no letting down, but we wish our readers to see some valuable documents not owned by us, and destined to a rather limited circulation, unless taken up by some of the journals. As an illustration, our house publishes the transactions of the Illinois State Society. Some papers were read there entirely too valuable to be allowed only the circulation of the annual volume of the society. We were unable to be present; but friends in whose judgment we confide regard the joint meeting of the two societies, at Rock Island and Davenport, as the most instructive professional meeting they ever attended. If we publish Doctor Gilmer's article on "Fractures of the inferior maxilla," it will be copiously illustrated by cuts of colored drawings from the pencil of Dr. Black, of Jacksonville. With such a list of essayists as Gilmer, Townsend, Haskell, Dean, Richards, Talbot, Kitchen,

Miles, etc., it will be strange if we don't find something worth laying before our readers.

Then, we wish to draw on the pages of our cotemporaries, if for no other reason, because they draw on ours. Of course they are welcome, and we shall expect to make ourselves welcome when we come to them.

Notwithstanding this, we wish our friends to write for the JOURNAL whenever they ought to write, or feel like it. If we become too crowded, we can issue the oftener; and possibly you may thus force us to become a monthly, purely in self-defence.

When we said in our "salutatory" that, "with such help, we expect to have the most thoroughly original journal known to the profession," there was a very slight sneer at such an assumption by a sick man. We have shown the promise fulfilled, and now we propose to show the most carefully assorted compilations whenever we can make room for them. Now is a good time to subscribe.

THE SPLEEN — WHAT IS IT GOOD FOR?

A PATIENT died of typhoid fever at the age of forty-nine. Doctors Kods and Wachsmuth state that he had no spleen. The other abdominal viscera were normal. Now, if a man can live a half century, or so, without this organ, our question is not inappropriate. Will some of our physiological readers tell us all about it?

In Memoriam.

DR. JAMES TAYLOR.

THE members of the dental profession of Cincinnati and vicinity assembled in the lecture hall of the Ohio College of Dental Surgery, Tuesday evening, June 14th, 1881, and transacted the following:

Dr. W. Storer How was called to the chair, and Dr. A. G. Rose was appointed Secretary.

A committee of three, consisting of Drs. H. A. Smith, J. Taft and James Leslie, was appointed to report a paper expressive

of the feelings of the profession in reference to the death of Prof. James Taylor. The following was reported and adopted :

"Death is a common event among men. Some pass away after much suffering, longing for its release of pain; but the sudden death of our dear friend and teacher, Prof. James Taylor, awakes within us feelings of profound sorrow. But a day before his death, and in his apparent usual health, some of us conversed with him about the affairs of the Ohio College of Dental Surgery, of which it may be said he was pre-eminently its founder, and one of its professors ever since his indomitable energy and professional spirit brought it into being thirty-six years ago; and during all that time his interest never abated. In its infancy he nursed it with all the tenderness of a mother for her child, and he lived long enough to have a pride in its present strength.

Strange, indeed, that so far away from all the seats of learning, he founded the first dental college in the world. Thousands of dollars he gave for which he received no returns, and years of faithful and laborious services for which he received no pay. He gathered others around him, inspiring them with a portion of his spirit; and during the day of its early struggles continually made sacrifices for the uplifting of the profession he had adopted, and diffusing among men educated practitioners of the dental profession. He was one of the few living practitioners who are remembered as the fathers of our profession; and the Alumni scattered all over this country, and in every nation of the globe, will respond with the feeling of genuine sorrow when they hear that their revered instructor is dead. We remember his urbanity—his gentle, manly deportment, his kind words, his ability and patience as a teacher; and though the years were passing, time left her mark so gently on him, that his compeers failed to realize he had reached the ripe age of seventy-two.

Notwithstanding a large private practice he could not ignore, last winter he met his classes with much of their own youthful vigor, and lectured with all the ability of his more youthful years, showing himself familiar with the latest discoveries and improvements pertaining to our profession. He gathered diligently and gave freely of all he had acquired as a teacher, culled or established by a ripe experience; but if there is one act more than another, in addition to all his labor for the education of others, that prominently marks the character of this noble man,

it was that feeling that prompted him to give to every graduate, with reverence, a copy of the Bible. The diploma he conferred was the evidence of their professional standing; but this last gift indicated a study that reminded them of something above the curriculum of College studies.

His daily life was a fine example of its teachings. We thank God for the beautiful life of our friend as illustrated during so many years in science, in the church, in the State, and the private walks of men.

In his death we have some conception of the deep sorrow that dwells in the heart of the bereaved widow, and relatives; and we tender to her and them our deep sympathy in this sudden bereavement.

H. A. SMITH,
J. TAFT,
JAMES LESLIE.

The members present very generally indulged in expressions of sorrow and bereavement and of respect for the departed, all tending to show the high regard in which our friend was held.

PROGRESS? OR WHAT?

THE item below we take from the *Medical Record* for the sake of the information it gives to the readers of the JOURNAL, and especially for the purpose of cheering our friend, the *Missouri Dental Journal* man. He will see that there is still hope for him. We shall expect him along by the time our calf is fattened, and he shall have his choice—cutlets, stuffed kidney or loin:

“The expansion of the homœopathic mind is well illustrated by the course of our esteemed contemporary, the *New York Medical (nee Homœopathic) Times*. Since it dropped the title ‘homœopathic’ it has been studying to exclude that objectionable word altogether from its columns. And it has even been referring to the American Institute of Homœopathy as the ‘Institute,’ adding, of course, the annual announcement that it is the ‘oldest national medical organization in the country.’ The *Times* still thinks us trammelled by the absurd traditions of the past, and we think the *Times* and its contributors ought to learn pathology. But progress is affecting everything. It has affected our esteemed contemporary, and we will yet see it print

reports of our Pathological Society. The editors announce that they will practise hereafter as regular physicians. The rule (not law) of similars will be used in selecting remedies only when such rule seems advisable. The homœopathic materia medica, we are told, is largely an imaginative work; it contains a frightful bulk of non-essentials and unproved statements. They believe in no medical dogmas, and assert that medical knowledge and skill are the only tests of the physician. Homœopathy, as a distinct school of medicine, has ceased to exist among educated men. This is what the *Times* says, or means, and we can say no more."

UNFORTUNATE INTERFERENCE.

PHYSICIANS, for want of thought, or possibly sometimes from having forgotten the details of second dentition, now and then, do mischief by undue and uncalled for interference. The most serious cases of this kind that we have observed, are those in which the cuspids are extracted to make room for the permanent laterals. It is very natural for parents, in cases of doubt, to consult their family physicians. Since the development of dental surgery into a profession, (or a specialty), less attention to dentition is given in the curriculum of medical study than before. The order of appearance in second dentition is forgotten, so when they see a permanent lateral emerging from the gum, entirely out of line, for want of room, it is not strange, but very unfortunate, that they at once extract the cuspid. The development of the alveolus is arrested, the lateral comes nicely into line, and the parents are delighted, and the physician satisfied. Soon the first temporary molar is shed, it and the permanent lateral having been in close contact. The bicuspid follows, close beside the lateral; and now, if the permanent cuspid was not destroyed by the extraction of its predecessor, where shall it appear? As the arch is compact, it is forced either to the outside or inside of the line, and a very unsightly and permanent deformity is the result. Scores of such cases have we witnessed in the forty-four years of our professional experience.

In like manner have we often seen the temporary laterals removed, to make room for the permanent centrals. This is not quite so serious, but certainly bad enough. Often the pulps of

the permanent laterals are drawn out in this way, by their adhering to the roots of the temporary teeth. Not long ago, a popular physician told us he had quite a curiosity to show us and in our line of thought. Taking out a small vial, he said, "See here! I took out a tooth for a beautiful little girl the other day, to make room for a new tooth; and look, here is a curious little teat attached to its root." And he showed us a temporary lateral, with the pulp of the permanent one attached to it. Maimed for life—was that beautiful little girl.

There is not much excuse for such malpractice. We are not so much surprised that physicians forget, as that they presume to know when so dangerously befogged. Better far, had he cut off the little girl's finger.

Let it be borne in mind that a temporary tooth is to be removed only to make room for its own successor. Let it never be extracted on any side issue. When physicians are not posted, they should refer all such cases to dentists.

"GALEN" ON CHOLERA INFANTUM.

WE hope our dental readers will carefully study the two articles by "Galen." Perhaps no other disease is so disastrous to first dentition. Often we have seen the little dental organs eaten off as fast as they appeared through the gums. And right in this connection there is a principle of great practical importance to dentists that may often lead to correct diagnosis and prognosis, in reference to second dentition.

Ordinarily, when we find the first set of teeth very defective we are discouraged as to the fate of the second, and well we may be if the defect is caused by the force of heredity. But we should always inquire of the mother, if practicable, and if we find that the patient suffered from chronic cholera infantum, while developing the first teeth, we may be encouraged to make vigorous efforts to save the permanent set, if other circumstances are favorable, for the tendency of the patient's constitution may be toward good teeth; and with good health during the development of the second set, they may be all that can be desired. When a young patient is brought to us, we should always make it a point to learn the history of the temporary teeth as accurately as is pos-

sible, and we have always special cause for gratification if we find their deficiencies are accidental, as when destroyed by the disease referred to, and not congenital. Dentists should carefully study the diseases that directly deteriorate dentition.

THE ATTEMPTED ASSASSINATION.

THE mothers and maidens were putting the last touches on the sweet cakes, having already selected and laid out their coolest becoming costumes ; their sons and brothers had laid in their fire-crackers, and prepared the frame works of their toy balloons ; their fathers and husbands had "greased" the axles of the family carriages, and examined the shoes of the regular coach horses ; the lunch baskets had been dusted with the feather-brush and placed where they would come "handy," and, thus all was ready when the holy Sabbath were past, to let innocent joy run riot on the jubilee of the nation, the holiday of the year, the anniversary of Freedom's birth, the "Fourth of July." The aged were busy with thoughts of long ago ; the middle aged rejoiced that "this cruel war was over," that our nation, tried in the furnace of fiery strife, heated seven-fold, had stood the test, and come out like gold tried in the fire ; the children swallowed their beating little hearts twice a minute, as they longingly looked forward to a day's enjoyment to be made up of a mixture of cousins, crackers, cakes, carelessness, with racing, running, rioting, rambling, romping among hills, hollows, trees, rills, rivers, and all—*all* for joy and gladness, which to describe, words are found worthless.

But a lightning's flash from a clear sky blazed across our continent, and burned into the brains of young and old, the soul-harrowing sentence, THE PRESIDENT IS SHOT BY AN ASSASSIN !

Pen cannot paint, nor tongue tell the sad scene. "Men's hearts failing them for fear." "Rachel weeping for her children." Women weeping at the grave of the crucified one. Some such scene of sorrow may parallel, none can eclipse, the sudden sorrow of July 2d, 1881. Breaths were instinctively held as if full breathing might take air needed by our wounded President. Prayers ascended to the throne of God from lips all unfamiliar with prayer. The wires were watched as if they must bring

news of relief. "The Fourth" was spent in devotion rather than in joyous delights. Hope deferred made hearts sick. All the civilized world was wired together in words of sympathy for the wounded chieftain, as well as for the little woman, yet an invalid, and for the matron of the gray hairs whose "baby" had been stricken down by the assassin's bullet.

But the noon of the 5th hinted hope. Hearts rebounded, Heaven was thanked, songs of praise ascended. Hope, fear—fear, hope—thus, and thus, day in and day out, till at last our worthy chieftain is bidden by his watchful physicians, to make out his bill for breakfast. And now, all is hopeful, even though our hero President still suffers from a deadly wound, at this writing. The mental strain on the American nation cannot be measured. But who can look carelessly on at the calm, firm composure of the great man and his family? Who can fail to see that a strength above their own sustained them? "Blessed is that people whose God is the Lord."

"Give thanks to God, for he is good,
For he hath mercy ever!"

OBITUARY.

DOCTOR JAMES TAYLOR.

Not often is a dental journal called on to record the death of a member of our profession so widely known, and so universally respected. Dentistry, at least in the west, had not reached even to a high order of handicraft, when Dr. Taylor threw his whole force of character into the effort for its development. His talents were not as brilliant as those of some of his coadjutors; but they were eminently practical. He was very ambitious—never willing to lag behind, and his perseverance was but little short of obstinacy. Hence, it has fallen to the lot of but few to do as much to promote dental science. He had the faculty of organizing, and thus he was able to utilize and co-operate with the labors of others. He soon became eminent as a practitioner, and retained his influence in this direction to the last. For the first eight years of its existence, he edited the *Dental Register*, the second dental periodical ever published, and now the oldest one in existence.

But the crowning effort of his professional life is found in the formation and organization of the Ohio College of Dental Surgery. He may be, indeed often has been, spoken of as the father of this institution. He was a member of its first faculty, and retained his connection with it through life. Though for a few years he felt the need of rest, and retired from active labor in it, holding the position of "Emeritus Professor," yet, at the call of the profession, he again buckled on his armor and enlisted for life; and while he enjoys his final rest, his name stands out on the college announcement as an active member of the faculty. He was not only active in his professorship, but was actively engaged in office practice; and, thus, in a double sense, may we say he "died in harness." His was a busy life. For years he attended to a large practice, edited a professional journal, and lectured in the college. Nor did he drop his pen when he let go the journal, but found time still to write articles calculated to advance the science of his chosen profession.

Doctor Taylor was a member of the Second Presbyterian Church of Cincinnati, and a ruling elder therein. Hence, his name was often seen on the rolls of the church courts, among the lay members.

Like many other men of distinction, Doctor Taylor died childless. He leaves a widow to mourn his departure. It has been stated that, by his will, his estate, after the death of his widow, goes mainly to the endowment funds of Lane Seminary and the University of Wooster. He was one of the Board of Trustees of the former, and his nephew is President of the latter. If this statement is true, it would seem that he never lost interest in the cause of education.

Of the doctor's age we are ignorant, but presume he was a little short of seventy. But if life is estimated by works, and not by the calendar, his was a long life. He is missed, and who shall be his substitute in the race of life? Not a feeble man, assuredly.

THE BUG THEORY OF DENTAL DECAY.

A LITTLE boy saw the decaying carcass of his pet spaniel, whose spirit had departed in search of the regions where good dogs go. "No wonder Trip died when he had all those worms in

him," was his assenting remark on seeing the millions of maggots devouring Trip's remains.

That little boy grew to manhood, and has become a full-fledged dentist — indeed he is a regular dentologist. And now he puts on his glasses, looks at a decaying tooth, and sees vast flocks of lively leptothrix, large herds of bouncing bacteria, well organized congregations of musical micrococci, and, true to the reasoning of his boyhood, he sighs, "Poor little tooth! no wonder you are destroyed, with all those big buggers biting you."

At a meeting of the New York Odontological Society, February 15, 1881, Dr. F. Y. Clark read a paper on "Bacteria," which gave rise to some discussion. It is not the present purpose to discuss the paper, so much as to notice some points in the discussion.

Professor Abbott expressed views in opposition to the germ theory of decay, believing that though leptothrix, etc., are found abundantly in decaying teeth, yet that it has not been shown that they play any part in causing decay. They "present themselves in large numbers, and thrive as soon as decomposition of the tooth substance begins." Prof. A. further claims, and correctly, that dental decay begins by the dissolution of the lime salts by an acid. But we are sorry to see such indefiniteness of expression, not only with him, but with others as well, who hold to the correct, in opposition to the germ theory. "An acid"—will tannic acid, gallic, or silicic acid dissolve the lime salts? And, besides, dental decay is often much more than solution of the salts.

But the cause of true science is not aided by indefinite and unguarded expressions, such as made by another esteemed member, who says, "The cause of decay has been long understood." How long? The writer of this has not been long in the profession, and when he came into it, his first question was, "If dental caries is caused by acids, what acids?" and not a man in the dental profession could answer. Our friend's statement (see page 319, vol. xxiii, *Dental Cosmos*) is entirely too crude to be satisfactory. He says the cause of decay "is no secret to those of sense possessed, and is shown by the simple chemical experiment of immersing an egg in vinegar. This will tell the whole story." But it tells nothing but that vinegar is a solvent of egg-shells, which is not an important fact. Nothing like any of the varieties of dental caries can be thus produced. Acetic acid (the active principle of vinegar) can produce, when nascent, one variety known as

"chemical abrasion." He goes on to say that, "Dental decay is the dissolution of lime salts by the presence of an acid, and the progress of the decay is according to the measure of its strength." Now, the indefiniteness of this statement shows that if the cause has been long understood, it is, however, not yet understood by our friend who is speaking, unless he is misreported, which is probable. He seems to ignore the fact that dental decay is not a unit—that we have to deal with at least four varieties of it. And in some of these the process is much more than the dissolution of the lime salts, as in "white decay," and "chemical abrasion." And the progress of the decay is more influenced by the nature of the acid producing it, than by the "measure of its strength." For example, black decay, caused always by the action of sulphuric acid, can never progress as rapidly as white decay, which is always caused by nitric acid, let the measure of strength be what it may. Then how unguarded and useless the expression, "I declared to this society years ago that teeth are but organized lumps of lime!" Let him look at a tooth affected by the most common variety of dental caries—that caused by hydrochloric acid—and he will find the cavity full of tooth substance which bears no resemblance to lime. But further, and worse, he says, "Decay, when produced by a direct or highly acute acid, is very white." This shows an entire want of a knowledge of the nature of dental decay; for it is always produced by a "direct acid," and always by a "highly acute" one, for the acting acid is always in its nascent state when producing decay, and is, therefore, as acute as it is possible for it to be. But decay is "very white" only when caused by nitric acid. And our good brother concludes by telling us, "We (he) understand this very well; we should be very obtuse, intellectually, if we did not." But would he allow us to ask for one more witness, before assenting to his statement? We understand it only tolerably well, and it cost more time, study, experiment, research, waste of health, etc., than any other subject that ever attracted our attention. Judging by our own experience, we think our good brother will find necessary, at least ten years of diligent investigation, before he "understands this very well," unless he appropriates the maturer thoughts of those who have gone before him.

But our friend who advocates the germ theory demonstrates that he has not studied the chemical theory of decay. He asks, with an air of triumph, "How is it that teeth decay in mouths

where no trace of acid is found, but where the fluids are alkaline?" But the alkaline state of the oral fluids is always a strong indication of the very worst form of dental caries; for in a large majority of such cases, if not all, the alkalinity is due to ammonia, and if ammonia is exposed to oxygen, free, or in a compound easily decomposed, nitric acid is formed, as uniformly as water flows downward. Oxygen is always present in the mouth; and it is to be borne in mind, not that nitric acid may, but that it must be formed where ammonia is present; and that the resultant, nitric acid, being nascent, cannot fail to produce "white decay," if teeth are present.

Our germ theory friend, too, tells us that "It is impossible to account for all the different shades of caries on the acid theory." But he says this because he has not duly investigated the acid theory. Nothing known can dissolve out the lime salts and leave the gelatin, as in the most common decay, but hydrochloric acid. Nothing but nitric acid can produce all the phenomena of white decay. Sulphuric acid naturally causes all the properties and peculiarities of black decay; and it alone can do it. Chemical abrasion is caused by an agent that dissolves the organic and inorganic materials of the tooth with equal facility—the one exactly as readily as the other; and this can be done by lactic and by acetic acids, and by no other known agent.

In concluding, let us try to help and bless our good brother, Professor A. He says, "The slower the decay the more the discoloration; the more rapid the decay the less the discoloration. Where this pigment comes from we do not pretend to say; but that it is contained in the organic substance of the tooth there can, in my opinion, be no question," etc.

The leaves of the forest fall. As soon as they have lost vitality, slow combustion (oxidation) acts on them. The carbon is the last element to burn. Left to itself, and uncrystallized, carbon is black. The same process takes place on the organic matter of the tooth, and if time is given, it becomes noticeable. As in black decay, the color is due to animal charcoal, more or less mixed with other substances.

We regard the immediate causes of decay as the most important question in dental science. And when we came into the dental profession and found that nobody knew, even though there are but a few varieties of decay, we felt ashamed of our profession,

and we gave ourselves no rest till this question had been satisfactorily solved. We are surprised that, even yet, there is so much indefinite thought on the subject. But it often happens that great truths travel slowly. This is our apology for the frank remarks here made in reference to the discussion of the subject, at the meeting referred to. They must not be construed as in any manner personal. The discussions are published, and are, therefore, public property. It is not probable they do full justice to the speakers; but it is with their teachings we are now concerned.

UNUSUAL EXEMPTION.

THIS morning a man of about forty-five years came in and had a tooth extracted, stating that he had never experienced toothache till within the last twelve hours. This is the more strange in view of the facts, that he has lost nearly half his teeth, and that those remaining are far from sound and healthy. We suppose the pulps retain vitality till exposed, and then die, without inflammation. This man has suffered but little if any pain through life, while the writer of this was never free from pain, unless when too young to remember; yet the latter is, and has been quite as cheerful as the former. This is life.

TEST FOR SUGAR IN URINE.

DENTISTS are men—unless women—and hence, in sudden changes from warm to cool weather, they often have an excessive flow of urine. Frequently we find a brother thus troubled, and overwhelmed with fright, lest he has diabetes, or Bright's disease. Often I have been asked to test specimens of urine for sugar. Trommer's test has been almost universally relied on in such cases; but the following is less complicated, and is claimed by Dr. L. S. Oppenheimer, in the *Louisville Medical News*, to be more reliable:

Take crystallized sulphate of copper, one grain, purified glycerine, one ounce, mix and dissolve. A dram of this will reduce a grain of grape sugar in caustic alkali. Put two or three drops of the mixture in a test tube (a homœopathic vial will

answer) and add a half ounce of liquor potassa. Boil this mixture. Then add a few drops of the suspected urine, and boil again. If sugar is present, a brownish yellow oxide of copper will be thrown down. Albumen in the urine does not interfere with the process.

The solution of copper sulphate in glycerine will keep indefinitely, and by its occasional use, much mental anxiety may be prevented.

HYPODERMIC ADMINISTRATION OF MORPHINE.

IN the first stage of periodontitis, a small dose of morphine injected into the cellular tissue between the lip or cheek and the gum, gives prompt relief to the patient, in many cases, and arrests the inflammation. It must be borne in mind, that in hypodermic medication, the dose must be much less than when given by the mouth. About half the quantity of the ordinary dose of morphine is sufficient for a hypodermic dose. The best mode of procedure for this practice is to have the morphine ready prepared in a solution of known strength. The formula we generally use is twelve grains of morphine to an ounce of distilled water. This gives one eighth of a grain to five minims of the solution, a convenient size for a dose. Unless it is known that the patient is accustomed to the use of the medicine, the five minims will be the proper dose to begin with for an adult. The solution should be filtered and kept tightly corked to prevent moths, or small particles of solid matter getting into the solution and choking the needle. This practice is entitled to more attention than it receives. The introduction of the medicine causes a momentary pain, but this is trivial, when compared to the relief afforded by the operation.

In 1867 Miss P. and a friend called on the writer at midnight, Miss P. suffering intense agony from inflammation in the socket of a lower molar tooth into which Professor Taft had a few days before inserted a large gold filling. By some singular mishap there was no morphine in the office, and after explaining that there would be very severe pain followed by complete relief, the tincture of opium was injected opposite to the root of the tooth. She was instructed to call in the morning, and at that time she reported that she was easy before reaching home, had slept

soundly for seven hours, and was still quite free from pain, though the cheek was considerably swollen. The swelling soon abated, and the tooth was doing good service several years afterwards, and there had never been alveolar abscess connected with it. But the use of the tincture is too painful to be recommended for general use.

ADULTERATION OF FOOD.

THIS is a practical question of special importance to dentists as well as other classes of society. The popular sentiment probably overrates the extent to which this adulteration is carried, while it most likely underrates the extent to which medicines are adulterated. The following, from the *Medical Record*, may be of interest to our readers:

“THE ADULTERATION OF FOOD.—The prize of \$1,000, offered by the National Board of Trade for ‘the best act or acts, accompanied by an essay, designed to prevent injurious adulteration, and to regulate the sale of food without imposing unnecessary burdens upon commerce,’ has just been awarded to Vernon M. Davis, of this city, and William H. Newell, M. D., of Jersey City Heights. The committee also recommended the printing of the essays of O. W. Wight, M. D., of Milwaukee, Wis., and Albert B. Prescott, of Ann Arbor, Mich. The report declares that none of our staple articles of food or drink are so commonly adulterated as to be dangerous to health or life, and that there is much more danger in this country from adulterated drugs than from adulterated food. Both State and National laws upon this subject are desirable.”

THE RELIGIOUS PRESS AND NOSTRUMS.

NOSTRUM venders delight in gaining access to the columns of religious newspapers. They know that many readers of these papers infer that the paper recommends that which it advertises. This is a correct inference. The thought that a *religious* paper would advertise a fraud seems horrible. Yet the leading swindles of the day are often thus commended. Not long ago we saw a nostrum set forth as an infallible cure for a long series of contradictory diseases, its recommendation being signed by a number of ministers of the gospel, who profess to believe that the blood of

Christ is the only infallible cure for anything. These ministers are generally honest, and almost as generally credulous. They cannot conceive that any one would so highly extol a worthless thing, and so they unite in the commendation, without any knowledge of it on their own part. And sometimes they forget that, even though they know more of theology and Hebrew than their neighbors, they know less of disease and medicine than the average farmer. A boy goes into the classical academy at sixteen, to college at eighteen, into the Theological Seminary at twenty-one, is licensed to preach at twenty-four, and if he has been faithful to his studies all these years, what chance has he had to acquire a knowledge of medical science, which has formed no part of his course? At twenty-five he may take charge of a congregation, and the members will look up to his opinions of medicine, holding them in higher estimation than those of the educated physician among them. The young minister is spoiled by such flattery; the quack flatters him still more, gets his name endorsing a worthless nostrum, and through his influence the quack gets into the church paper. The leading swindles of the age are thus pressed on a credulous public. The blind lead the blind.

“NERVE DESTROYED AND TOOTHACHE CURED.”

THE above stood as the heading to an advertisement of a dental empiric, year after year, in a popular newspaper, and, no doubt, greatly aided in fastening a popular error in the minds of the average public. Within an hour, two educated young persons came in, each to have the nerve killed in a bicuspid which had a mature abscess at its root. They were unwilling to believe the nerves were dead,—indeed, one of them, the young lady, knew better, for her tooth ached. These young folks are neither lonely nor singular. We have seen patients become angry on being told that the nerve was dead, even though the source of trouble was a root decayed away almost to its apex. The belief that our bodies are eaten by worms after burial is, perhaps, the only false notion so uniformly believed as that a tooth can not ache if its nerve, or pulp, is dead. For more than a quarter of a century we have diligently taught our patrons that toothache is not a disease, but only a symptom, and may arise from a variety of causes. We

shall persevere in our teaching, but we confess to discouragement. We think that probably half the community here still adhere to the old error.

How shall we account for the prevalence of the error? Could we clearly account for it, we might possibly modify our teaching, and render it more effective. When a tooth is aching from an exposed, and congested, or inflamed pulp, the pain is intolerable. A simple application, in such case, gives prompt, and sometimes permanent relief. A patient, having had such experience, may have toothache again, this time from periosteal inflammation. The pain is less excruciating than that in the former case, and hence he regards the former as the worse of the two, and is not willing to believe that such prompt and complete relief as he attained before is not attainable now, in what he regards as a milder affair. Or if he has had no such experience, his Aunt Mary can tell him all about it, and assure him that killing the nerve will stop any case of toothache; for, on her wedding morning, she had jumping toothache till the tooth split, and Dr. Ratisbane put some odontocaust arsenica in it, and killed the nerve in five minutes, and she never had toothache again.

At any rate, a majority of your patients will think you are lying—under a misapprehension—if you tell them a majority of the cases of toothache occur when the nerves are dead. Perhaps a combined effort—a fresh charge all along the line—by the profession might eradicate the mistake in a generation. At present it is annoying.

SOCIETIES.

“Two are better than one.”—SOLOMON.

AMERICAN DENTAL ASSOCIATION.

Editor of the Ohio State Journal of Dental Science.

I much regret that the extreme heat and a press of other duties have rendered it impossible for me to tell you much about the Association and its doings. It is quite probable that the change of date interfered somewhat with the efficiency of the meeting. Men put off labor and duty till the last hours possible, and hence the change to an earlier date found papers unprepared which might have done much to advance dental science. How-

ever, it is hoped the good thoughts will not be lost, but merely laid over for use on future occasions.

The Association met in Irving Hall, and, I am told, some eighty members and delegates were present when order was called. New members and later arrivals swelled the list to 120 before adjournment.

The officers elect for the ensuing year are, President, H. A. Smith, Cincinnati; First Vice President, W. C. Barrett, Buffalo; Second Vice President, G. J. Fredericks, New Orleans; Recording Secretary, G. H. Cushing, Chicago; Corresponding Secretary, A. M. Dudley, Salem, Mass.; Treasurer, W. H. Goddard, Louisville; Chairman of the Executive Committee, J. N. Crouse, Chicago.

The President, Prof. C. N. Pierce, presided with dignity without stiffness and formality, giving very general satisfaction. Dr. Fredericks, of New Orleans, read a paper on "Operative Dentistry," which was listened to with close attention. He gave soft gold in cylinders the preference, and of course the paper elicited a lively discussion, showing a great variety of opinions. Drs. Mills and Niles of Boston, Merriman of Salem, Mass., Webb, Crouse, Wetherbee and Palmer, of Syracuse, and others, gave their views.

The adjourned discussion of Dr. Atkinson's report on "Nomenclature and Terminology" was taken up. Mr. Stephen Pearl Andrews was allowed to give his views on the subject, and Dr. G. F. Water, of Boston, also spoke. "(Blynx" was not present, hence his views were not obtained).

In the afternoon Dr. Niles, of Boston, read a paper on "The Reflex Action and Shock in the Dental Specialty." Though a difficult subject it was handled at length and with energy. Of course I can give no synopsis of it in a brief letter, but a mention of its existence may induce some of your readers to be on the watch for it when published with the transactions.

"The Present Status of Histology" was discussed by Dr. Bodecker, of New York. For more than thirty years, he said, the cell doctrine has been regarded as the basis or foundation of histology. In 1839 Theodore Schuman announced that animal bodies as well as plants are built up by very minute vesicles, the so-called cells and their derivatives. In 1850 this doctrine was greatly improved and elucidated by Virchow, of Berlin. He re-

garded the liquid in the vesicle as the seat of life, and the point from which all multiplication of the cells originated. The cell doctrine was modified in 1862, by the late Max Schultze, of Germany, who claimed that instead of a vesicle holding a fluid, there existed a jelly like mass forming the body of the cell, and to this he applied the name "protoplasm." And now, said the speaker, the presence of the reticular structure in protoplasm is accepted by the principal histologists of both continents.

Prof. Frank Abbott read an elaborate paper on "Caries of the Human Teeth," his subject being copiously illustrated by drawings.

Dr. Davenport, of Massachusetts, also read a paper on the "Etiology of the Chemical Abrasion of the Cutting Edges of the Front Teeth."

At the evening session volunteer papers were discussed. In his remarks on the study of anæsthetics, Dr. Barrett deplored the tyranny of Berghism, which had in this city, he said, put a stop to physiological research, through the law against vivisection. He was opposed to inflicting unnecessary pain on dumb animals, but it is a law of nature that they should be used for man's benefit, and to what better purpose could their lives be devoted than the advancement of science?

A committee of three was appointed to express the sentiment of the Association as to the attempted assassination of our President. Abbott, New York, Litch, Philadelphia, and Fredericks, New Orleans, the committee.

A number of amusing and interesting episodes occurred which might interest your readers, if space permitted. One member spoke of himself and others as "Teeth Carpenters," and they didn't all like the designation. Another thought when we get our nomenclature straightened up, "we shall have the tip-top blue blossom of perfection." Of course that is to be after all have become "relationoids," "wato," "hobodo," "saiuts."

Of course the photograph man was there, and he took the Association from the doorsteps. I didn't hear any one say he would send the JOURNAL a copy of the picture, but certainly he will. After a good meeting, in spite of the heat, and the change of date, the Association adjourned to meet, next year, in Cincinnati; and may you be there to see, is the cordial wish of

NEBO.

INDIANA STATE DENTAL ASSOCIATION.

THIS Association met in the rooms of the Indiana Dental College, at 10 A. M., Tuesday, June 28, 1881, with Dr. Robert Van Valzah, of Terre Haute, President, in the chair.

The meeting was a success in every particular, many strangers, men of eminence, being in attendance. All felt that it was good to be there.

The following subjects were discussed: Mechanical Dentistry, Oral Surgery, Dental Development, Irregularities of the Teeth, Operative Dentistry, *Pyorrhæa Alveolaris*, Separation of the Teeth, Notes from Practice.

Under the head of Irregularities of the Teeth, Dr. G. W. Keely entertained the Association on the various methods employed for correcting irregularities, illustrating the *modus operandi* by cuts taken from the cases in question. His remarks were well received, and showed that he had the subject well in hand. The Association bids him come again.

On Tuesday evening the Association was handsomely entertained by the Indiana Medical College. The dentists were shown through the various departments of the College, after which Prof. Chambers gave an exhibition of anatomical stereoscopic views, by aid of the electric light. All left the College feeling well paid, and thanking the Professors of the Indiana Medical College for courtesies extended.

On Wednesday evening the trustees and faculty of the Indiana Dental College gave a reception to the visiting doctors. The entertainment consisted of music, readings, and a banquet. The last was much appreciated, as all know dentists are good feeders. Taking this session all in all, it was one of the best ever held, and was more numerously attended.

On Thursday the election of officers occurred: Dr. S. F. Kirk was elected President, Dr. J. E. Cravens First Vice-President. Before proceeding to install the newly elected officers, Dr. Robert Van Valzah delivered his valedictory address.

[This address was quite pointed, and well adapted to the occasion. Receiving it at so late a period, our room is too nearly all taken up to admit it. We have tried to make extracts from it, but it will not bear dividing. The proper way is to attend the

meetings; for a journal must fail to set forth much of the matter, and still more of the spirit of the meeting.—EDITOR.]

At the close of the address the President elect was installed, and the Association adjourned.

A NEW SOCIETY.

BELOW we give a condensed account of the formation of a new society. The names of members, and the programme for the next meeting, indicate a good degree of vital force in the new society.

THE ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA.

The Odontological Society of Western Pennsylvania completed its organization on Tuesday evening by the election of the following officers:

President—J. S. King.

Vice President—H. W. Arthur.

Recording Secretary—G. L. Simpson.

Corresponding Secretary—H. De Puy.

Treasurer—L. De Puy.

Censors—M. B. Lowry, J. Thompson, F. Herrick.

Executive Committee—J. G. Templeton, G. W. Green, George G. Crow.

Delegates to State Society—Gale French, H. W. Arthur, M. D. Galbraith, W. B. Libbey, W. B. Van Orsdel.

Delegates to American Dental Association—W. B. Libbey, J. E. Libbey, M. B. Lowry.

A constitution, by-laws and code of ethics were adopted.

The Executive Committee reported the following as the programme for the next meeting, to be held at New Castle, Pa., Tuesday, September 13, next:

A clinical demonstration, filling teeth with gold, by J. S. King, Pittsburgh. Clinical demonstration on treatment of fractures of the jaw with splints, bandages, etc., by W. E. Van Orsdel, of New Wilmington, Pa. Tumors of the mouth, and treatment; paper by M. B. Lowry, Brookville, Pa. Plastic fillings; their place in dentistry as a preserver of the teeth; paper by George G. Crow, of Carmichaeltown, Pa.

The following is a list of the members of the organization.

J. G. Templeton, J. S. King, G. L. Simpson, Gale French, W. E. Van Orsdel, M. B. Lowry, H. W. Arthur, J. P. Thompson, F. Herrick, L. De Puy, H. De Puy, D. P. Stewart, Burns, Cortland, King, Shannon, M. D. Galbraith, G. G. Crow, G. W. Green, J. A. Libbey, J. E. Libbey, W. B. Libbey.

THE INDIANA DENTAL ASSOCIATION.

President—Dr. S. T. Kirk, of Kokomo.

First Vice President—Dr. Cravens, of Indianapolis.

Second Vice President—Dr. G. A. Turner, of Franklin.

Secretary—Dr. R. W. Van Valzah, of Terre Haute.

Treasurer—Dr. Merrit Wells, of Indianapolis.

NEBRASKA STATE DENTAL SOCIETY.

THE fifth annual meeting of the Nebraska State Dental Society will convene at Omaha, Monday, September 12, 1881, at 7:30 P. M., and continue in session three days.

W. F. ROSEMAN, *Rec. Sec'y*,
Fremont, Nebraska.

Question and Answer.

“If you don't see what you want, ask for it.”—BILL O'FARE.

Editor of the Ohio State Journal of Dental Science.

Can a metal become a sulphide, a sulphuret, or a chloride, before it is an oxide? F. T. GRIMES, M. D., D. D. S.

ST. LOUIS, Mo., June 17, 1881.

ANSWER BY THE EDITOR.

Yes.

Editor of the Ohio State Journal of Dental Science.

1st. The decay of teeth; does it begin upon the inside?

I have seen long articles upon the subject to prove that it does not; but I have had so many cases where live and apparently sound teeth have become discolored, and in which I have found cavities with *no* external opening, that I am far from being satis-

fied with what I have read. The molars may begin to decay in the crown fissures, but my experience has not extended beyond the six front teeth.

2d. The circulation of a fluid substance in the teeth: If there is no circulation, why does the tooth turn red, even to the enamel, when injured? I have seen three or four cases in children, and one in an adult, where teeth were injured by a blow from clubs, etc. It looks very much like fluid colored with blood and is found in nearly all parts of the tooth.

Respectfully,

W. D. BALL.

ANSWER BY THE EDITOR.

We supposed the matter of the first question settled. The nature of dental decay is so well defined as local chemical action, that we feel that we know as well what chemical agent causes each variety, as we know the materials used in making bread, and that we know their origin and source as well as we know the mode of raising corn and wheat, therefore, we must be excused for doubting the accuracy of our correspondent's observation. He is outvoted on a fair count.

On the other hand we thought the entire profession conceded the circulation through dentine. It has been maintained that the blood corpuscles cannot circulate in the dentine, but, while so holding, the fact of circulation was always spoken of as a matter not in dispute, in any discussions we can now recall. All are familiar with the discoloration spoken of, which is, doubtless, caused by the coloring matter of broken down corpuscles.

Books and Pamphlets.

"I leave you here a little book."—JOHN RODGERS.

DENTAL CASE BOOK.

Messrs. Davis & Leyden have issued a Dental Case Book, arranged by W. C. Barrett, M. D., D. D. S., of Buffalo, N. Y. Judging from advanced sheets, we feel that we can not too highly commend the work to all who wish to engage, systematically, in the practice of Dental Medicine.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. I.

OCTOBER 1, 1881.

No. 5.

Contributions.

"Withholding facts is robbery."—ORVILLE DEWEY.

GEOGRAPHICAL DISTRIBUTION OF DENTAL CARIES
IN THE UNITED STATES.

E. G. BETTY, D. D. S., CINCINNATI, OHIO.

THE paper herewith submitted for the consideration of the reader, embodies an idea the writer has entertained for several years past, and the hope is, that it will succeed in eliciting the thoughts of others upon the same subject. The purpose is to suggest a plan by which we can gain some knowledge of the prevalence and distribution of dental caries throughout the United States. This is, no doubt, a daring scheme and one that on a superficial view would seem to warrant the assertion that it is impossible.

But when we consider its paramount importance to the profession, and the beneficial results that it will undoubtedly obtain, it is easy to estimate the value of the reward we shall receive for our efforts.

To understand any process of nature, it is not only necessary to have a thorough knowledge of details as they come under our observation, but it is equally essential that we include in our estimate such generalities as are naturally suggested by the drift of the details. To arrive at something like a comprehensive view, it is absolutely requisite that details should be classified and arranged in their proper order, just as the naturalist proceeds when making up his estimate of animate nature. By a comparison of the laws that govern the departments of nature, are we enabled to rise to an eminence that not only increases the breadth of our horizon, but gives us increased facilities for a better understanding of any subject, in all its bearings.

This fact was fully appreciated by Cuvier. He spent long years of patient toil in studying, by actual dissection, the anatomical features of all kinds of animal life. Imagine the wonderful stores of knowledge he thus accumulated. Every detail was thoroughly known to him, as it had never been known to man before.

From this vast magazine was he enabled to discover the great laws controlling the divisions of animal life. It was by classification that he laid the foundations upon which we to-day rest our belief in the evolution of man.

It is patent to all of us that in this day of progress, little or nothing can be accomplished without the aid of statistics. Every department of human ingenuity and mental activity is more or less accustomed to being expressed in tables and ponderous columns of figures, which to the intelligent, are eloquent. They speak a language that is at once laconic and pregnant with living thoughts. The excuse for these prefatory remarks is, that the writer wishes to impress upon the mind of the reader the necessity for close observation of details, also that it is equally important that every little fact, no matter how small or apparently insignificant in itself, should be carefully recorded. The accumulation of a host of these, each one proving beyond peradventure one phase of a law or problem, becomes indispensable to the accuracy of any scientific proposition.

In the aggregate their momentum is irresistible, establishing upon enduring foundations an elaborate super-structure that at all times gives evidence of what man is capable when he proceeds in the proper manner.

To obtain the object the writer has in view, a great amount of patient labor will have to be expended. Each one of us should feel himself called upon to contribute his mite to swell the fund from which the writer is confident great good is to result. It is a simple and easy matter for every practitioner to make an examination of every mouth he sees, whether he puts in a filling or not, note down the number of teeth decayed, the character of the decay, its location and extent.* Then, too, it would be well to record the age, sex, and nativity of each patient. One year's record will not only look scientific when neatly tabulated, but will contain material that is invaluable. The work for the year can be reported to the State Dental Society, thus making it a sort of treasury.

When every State makes its report, either to some society representing the Union, or to some individual willing to assume the task, the whole number of reports can be combined to form one that will include every part of the country. When this large body of statistics is gathered together, the real work is to be done. We will then have in our possession a pretty correct idea of the geographical distribution of dental caries over the United States. To make this knowledge available for pathological and other purposes, the statistics will have to be studied in connection with the climatology of the localities in which the tables are compiled. This is the part of the work that will bring into play the widest knowledge of the physical characteristics of the country, both local and general. It is a fact long ago established, that man is a creature more or less modified by the climatic influences surrounding him, and to gain an insight into the forces that produce these modifications upon man, we shall have to study the physical geography of the region he inhabits, his elevation above the sea level, the changes of temperature to which he is subjected, the amount of rain-fall in the year, the variations of barometrical pressure, and other conditions that go to make up the total we call climate. And this is not all, for there yet remain to consider the quality and quantity of the food upon which he subsists and the purity of the water he drinks. These latter are important elements that cannot by any means be dis-

* The paper on the National History of Caries of the Teeth, by Dr. G. V. Black, in the Illinois State Dental Society transactions for 1880, contains some points that are interesting in this connection.

regarded, and though they are also modified by local climatic influences, they bear responsible position in the schedule. The inhabitants of any particular locality that are especially favored with abundant food of prime quality grown in their immediate vicinity, cannot, however, be said to enjoy it exclusively. The railroad is a means of distribution that favors all alike, no matter where situated; in this way very materially equalizing the influence that good, abundant food would otherwise exert only by being limited to particular localities. This fact, however, does not affect the force of the statement, that food is a potent factor.

It is fair to presume that all parts of the animal economy will be modified just in proportion as they are essential to the well-being of the individual. Life and health depend as much upon the mechanism of digestion as they do upon respiration, the circulation of the blood, or the activity of the skin. The teeth, we are told, are classed among the "appendages of the skin," and are, moreover, intimately associated with the normal process of digestion. Thus is our special department of study doubly of importance; first, as developmental; second, as functional. And right here do we see the urgent necessity for extending our inquiries into the domain of the natural history of man. If we are to deal intelligently with the problem of the prophylactic treatment of dental diseases, we must be conversant with the history of man's development; and by this is meant not only foetal development, which is a secondary consideration, but a study of the causes that have operated to bring man as he is, into existence upon the globe. To do this in its widest sense, however, there is not yet sufficient material nor is the human mind itself sufficiently developed. Desirable as such knowledge is, we must content ourselves for the present by taking man as he is, and employ our energies in estimating the modifying powers of climatology and geographical position. It is well known that the races of man differ very much in many particulars. There are reasons for this difference, and to the influence of climate must we look for the explanation. We do not, of course, expect to find as many differences, and to so marked a degree, among the inhabitants of the United States, as we would in an examination of the entire population of the globe. Still, there are found within the limits of our country all varieties of climate, and it is not unreasonable to suppose that even in this day of rapid and ready transportation,

the effects of climate in localities are more or less marked and sufficiently so to be worthy of scientific investigation. It was Baron Von Humboldt who just pointed out the true method for a determination of climatic influence upon man. He found the yearly mean temperatures of certain localities over the surface of the earth, and drew lines around the circumference through places having about the same yearly mean. These lines are the "isothermals" that have, since his time, become so supremely important to the meteorologist in his calculations of the weather.* The data in Humboldt's time were exceedingly meager, and not sufficient for practical purposes. Meteorology has since become developed into a tolerably accurate science, spreading its stations all over the globe, greatly increasing the volume and value of the statistics it collects. And just in proportion as we gain a wider knowledge of the changes and effects of climate over the earth's surface, can we employ our deductions with greater certainty in estimating this influence in any one locality? To heat is due our life. From it proceeds, directly or indirectly, nearly all the variations of climate; and when it is studied in connection with the barometer our estimate becomes of scientific and practical value.

The Signal Service of the United States Government has placed at our disposal complete and accurate charts of the distribution of heat over the country, illustrated by the isothermal lines. These, in conjunction with our geological and geographical maps, give us ample material from which to draw our conclusions. Our statistics of the geographical distribution of dental caries will enable us to study the character and extent of caries upon the isothermal lines of the map. The value of the knowledge we shall obtain from this source will be enhanced by including in the investigation the character and quality of the food supplied. It may appear to the reader that the idea put forth in this outline is entirely too sanguine and not based upon sufficient fact. It has been the writer's privilege to hear several dentists whose testimony cannot be impeached, declare in open session at dental meetings, that "the malaria of a region is an influence militating against both the formation of good dentures and the

* The only thing that is yet incomplete regarding researches in the distribution of heat, is that, so far we can register only the *intensity* of the heat, its *quantity*, which is of equal importance to the value of our deductions, we have not as yet been able to measure.

treatment of their subsequent disease." Also, "that people inhabiting lime-stone regions have better bones and teeth." All agree that upon the character of the food consumed, depends in a great measure, the quality of the teeth produced. Why is it that every now and then so much stress is laid upon heredity? Can we conceive of anything else than climate operating, to produce this very heredity?

The constant dropping of limpid water will, in time, wear away the most resisting granite; so, too, will climate, continuously acting, make an indelible impression upon a race of men settled in a country new to it and differing in many respects from the locality vacated. The new impressions in time become part of the individual, and, of course, of the race, being transmitted from parent to child, generation after generation, the continued influence of climate thus becoming hereditary.

Intermarriage is a source of modification that manifests itself in far less time than climate, the offspring almost immediately acquiring some of the characteristics of both parents. Time will, nevertheless, exhibit the change upon the descendents of such unions, and in favor of that parentage always resident in the same locality; the temporary effect of the new-comer upon the offspring being largely reduced, if not eventually obliterated. This fact relates to the union of two people widely differing in physical and mental characteristics, and coming from climates that have few resemblances. In testimony of this might be mentioned the fact, that in the United States the negro population is becoming absorbed right under our eyes, the mixing of the two bloods resulting in immediate change at the expense of the negro. The climate of the country is also militating against the existence of the negro as a distinctive race, and the future will show but few traces of the amalgamation.

We have thus far seen that there are some facts that prove the existence of an under-current, the drift and force of which we have scarcely been aware. We acknowledge to one another that the Scot, the Hindoo and the negro, possess superior dental organs; that heredity is a powerful factor; that a malarial district modifies the quality of teeth produced, and diminishes the the ratio of successful treatment; that a lime-stone region is productive of first-class bones and teeth, and that the quality of food consumed produces a greater or less effect upon the organism.

These and many other facts of a like nature are in our possession, but scattered about here and there only waiting to be drafted into the general fund and classified, in order that we may draw from it a broader and deeper knowledge of the laws that govern the development and modifications of the organs whose diseases we assume to treat. This much we know, and knowing it, should stimulate us to a better, more profound, and more scientific study of the reasons why.

The admirable organization of our dental societies, local, State and National, gives us at once a ready means for collecting at one point, just the material that is needed to develop the idea here set forth. Magitot has appended to his treatise on dental caries, a chart displaying by shaded lines the distribution of caries throughout France. Though the effort is a commendable one, and a move in the right direction, the chart cannot have much value. Not because the author is incompetent by any means, but because there are few intelligent dentists, comparatively, in France, and nothing scarcely in the way of societies worth mentioning. Besides the geographical area of France is as nothing compared with that of the United States, and, of course, the climate presents but little variation. For these reasons it is evident the data collected cannot possess anything like the completeness and reliability necessary for a scientific investigation. In the United States the circumstances, we are happy to say, are of a very different aspect. We possess a very complete and effective system of professional societies, and by its means we both collect and disseminate professional knowledge with dispatch and accuracy. It is with this fact in view, that the writer thinks there will be no difficulty in collecting the statistics of the prevalence and distribution of dental caries in this country. Could *every* dentist be prevailed upon to note down in a blank book ruled for the purpose, the few facts regarding each mouth, for the space of one year and then send his collection to his State society, together with his name and location, we could in this way make a most valuable contribution to dental science. It is impossible to imagine the amount of valuable knowledge competent minds could evolve from such a store of reliable statistics when dealt with in the manner proposed. We would not only obtain much that is of value pathologically, but could deduce much that would add to our hygienic lore. Many things thought

of in connection with this subject will have to be left for others to write and talk about, for it is an inexhaustible theme and one that will engage much of the time and brains of the dental profession of the future.

DUTY.

BY DR. J. A. ROBINSON, JACKSON, MICH.

I WALK upon the earth : the flowers bloom,
 The noise of labor rings on every side ;
 Children, with play and duty, hours divide,
 While trees are in their blossom o'er my tomb.

I look around the earth : my friends are here ;
 The loved ones of my life rejoice to see
 My lengthened days and months glide happily
 To their long rest, with neither dread nor fear.

I rest upon the earth : my step, once strong,
 Is feeble, slow and somewhat tottering now ;
 With cheerful heart and face, but wrinkled brow,
 With confidence I homeward haste along.

For nearly fifty years my constant love
 Has been my dental office and my tools ;
 And now I see some friends I can't call fools
 Marring my life's work ere I go above.

But I must work, work on ! Can I do more ?
 Ah, yes ! for, as I bloom perennially,
 My voice shall cheer each fainting heart I see,
 And help it blossom for the other shore.

TREATMENT OF TEETH WITH DEAD OR DYING PULPS; ALSO, TREATMENT OF ALVEOLAR ABSCESS.

BY DR. H. H. TOWNSEND, OF PONTIAC.

[Read before the Illinois State Dental Society, May 10th, 1881]

Mr. President and Gentlemen :

The great number of teeth that are now restored to comfort and usefulness, after disease or death of the pulp, or the pericementum has become inflamed or abscessed, which, but a few

years ago were lost, with little or no effort being made for their preservation, is certainly very gratifying evidence of progress in this direction. That there are still some obstinate and intractable cases which, despite the most patient and persistent treatment, have thus far proven incurable, while not so gratifying, is evidence that something yet remains to be accomplished. That the success attained by the majority of the profession in the treatment of alveolar abscess is largely due to the essays and discussions of the dental societies, I think will be admitted, and it is with the *hope* that by again debating this question, and comparing ideas and experiences, some new light may be afforded us, and some means and methods suggested which will enable us to treat successfully some of the now incurable cases, that I consented to write upon this subject. An abscess is said to be a collection of pus in a circumscribed cavity. Alveolus is defined as a socket. Hence a collection of pus in the socket of a tooth is an alveolar abscess.

The first symptoms of this affection are a slight uneasiness in the tooth, an occasional slight pain, and a little tenderness felt upon pressure. As the disease progresses, the severity of the symptoms increases to an acute pain, elongation and looseness of the tooth, which is so sore that the slightest pressure is unbearable. The gum over the affected tooth becomes swollen, dark red, and very painful. When pus has pierced the bone, fluctuation is easily felt by gently pressing upon the gum with the finger. In some cases there is considerable constitutional disturbance. The tongue is thickly coated; breath quite offensive; skin hot and dry; pulse full and bounding; bowels constipated; and in short, a real inflammatory fever is developed; the formation of pus being announced by a distinct chill. It is interesting to note the great difference in the severity of the symptoms in different cases during the formation of abscesses; frequently a slight soreness and occasional pain being all that is noticed by the patient until pus is discharged through the gum.

The principal causes of this disease are dead or dying pulps confined within the pulp chambers of the teeth; dead, or partially dead roots, which nature is making an effort to expel; and mechanical injuries. To which should be added as occasional causes: the imperfect removal of pulps; imperfectly filled canals; filling the apical portions of canals with cotton; and small canals

left untouched. The severity of the disease is modified by the diathesis and health of the patients.

Pathologically, an alveolar abscess is quite similar to a whitlow or felon upon the finger, the difference is principally that of location, both being an inflammation and suppuration of a periosteal tissue.

A brief allusion to the pathology of inflammation may not be out of place, inasmuch as a knowledge of these phenomena is necessary to intelligent treatment. It will be remembered that when an irritant is applied to a healthy tissue, a contraction of the blood vessels first takes place, followed by a corresponding dilatation—an increased flow of blood to the part; an adhering of the red blood corpuscles to the walls of the vessels, and also to each other until they become impacted, and the congestion results in complete stagnation—the dilatation being due to muscular exhaustion of the contractile coats of the vessels. If by any means this congestion can be relieved, the accumulated corpuscles sent off into the current, some stimulant afforded the exhausted coats of the vessels, and the circulation re established—pus will not form, and the inflammation terminates in resolution. If, however, the congestion goes on to complete stagnation, suppuration must take place, and an abscess is the result. The length of time that an inflammation may exist, before terminating either by resolution or suppuration, varies as greatly as does the severity of the symptoms in different cases. Sometimes an abscess is formed only after weeks of inflammation, and again but few hours are required for the formation of pus.

The source of pus, the precise manner of its formation, of what it is composed, and in what respect it differs from the white blood corpuscles, are questions not yet definitely settled. Practically, with regard to the treatment of alveolar abscess, these are questions which concern us less than that of the *absorption of pus*.

Hamilton's Surgery, page 38, says upon this point that, "It is now pretty generally admitted that pus corpuscles, as such, are never absorbed; but that, after undergoing certain changes presently to be described, all the elements composing pus may return to the circulation; yet examples of the spontaneous disappearance of purulent collections, by disintegration and absorption, are certainly very rare. Its absorption is effected in the

following manner: First, the serum and salts constituting the most fluid parts are removed; second, the pus corpuscles undergo fatty degeneration and disintegration; finally, the pus corpuscles, thus metamorphosed and fluidified, are absorbed, also. In other cases, the serum alone is absorbed, and the salts, with the dessicated pus corpuscles, remain. The pus corpuscles, when thus separated from the serum, dried and aggregated, forming a cheesy mass resembling very much tubercular deposits; the salts when not absorbed remaining as cretaceous layers or nodules."

The treatment of alveolar abscess will depend upon the cause, and the condition in which we find it. If occasioned by a dead root, which nature is trying to expel, the extraction of the root will usually be all the treatment required. If from a blow upon the tooth, or other mechanical injuries, the pulp is still alive, and suppuration has not taken place, the inflammation may be arrested by preventing occlusion with the antagonizing tooth, and the frequent application to the gum around the affected tooth of the tinctures of aconite and iodine, two parts of the former to one of the latter. If pus has already formed, and the pulp still retains its vitality, every effort should be made to arrest the progress of the disease, as the pulp cannot long remain in a state of health if suppuration is allowed to go on; particularly if the sac is near the apex of the root. Here we have a case analogous to the whitlow or felon referred to: suppuration of a periosteal membrane, where the cause is removed. A felon freely opened as soon as pus is formed, usually requires little or no other treatment. The same is true of an abscessed tooth caused by mechanical injury, where the pulp is not diseased. It is rather heroic practice to cut through the gum and alveolus, but I think it is justifiable in such cases. I should, in addition to the opening, paint the gum with aconite and iodine, as there is always some congestion surrounding the suppurating tissue. Where an abscess is caused by a dead or dying pulp, we must first remove the cause. It frequently happens, however, that owing to the extreme soreness of the tooth, and the nervous condition of the patient, it is impossible to do more at the first sitting than to open the pulp chamber and afford vent to the pent-up gases, deferring extirpation and cleansing the root canals until the soreness subsides, which it usually does in a few days, especially if the aconite and iodine is applied to the gums. If the pulp is still too sensitive to

admit of extirpation, I should devitalize it with arsenic, using for the purpose not more than 1-250 part of a grain, combined with from 1-32 to 1-16 of a grain of morphia with sufficient creosote to moisten the pellet of cotton, covering in all cases with a temporary filling of gutta percha. It is important that the surplus creosote should be absorbed before introducing the temporary filling, as otherwise it might be forced out, carrying with it some of the arsenic. Accidents have been caused in this way. The length of time which arsenic should be allowed to remain in a tooth varies in different cases. I think, however, it may safely be left until the pulp is entirely devitalized; this varying from a few hours to several weeks. As the last portions of the pulp die, some soreness is usually felt, which generally disappears in a day or two. No further irritation is experienced until mephitic gases are formed, when extirpation should be no longer delayed. Perhaps the best time for the removal of the pulp is when it is entirely dead and sloughing has taken place, as it then produces no irritation, is painless, and more easily accomplished than at any other time. I know of no way of determining just when this has taken place, except by testing. Usually, I think it occurs soon after the soreness subsides, occasioned by death of the apical portions of the pulp. I certainly would not advise the removal of a pulp when only partially devitalized, as it is a very painful operation to the patient, and is liable to produce inflammation of the tissues beyond the foramen, which is often very difficult to control.

It is not difficult to say that the pulps should be entirely removed, the canals thoroughly cleansed and perfectly filled; but to state just how this is to be accomplished is not so easy—will say, however, that for the successful removal of the pulp three things, at least, I regard as highly essential, viz.: The rubber dam, good light, and very delicate instruments, either entirely soft, or with an excellent spring temper. I wonder that any one should attempt the extirpation of a dental pulp, at the present day, without the aid of the rubber dam; yet I know it is the common practice of many operators. It is true that in a dry mouth the anterior teeth of the upper jaw can be kept tolerably dry with a napkin; but, all things considered, I doubt if as successful operations can be performed in any case without the rubber as with it. In the first place, then, I always apply the rubber

dam, and open the cavity sufficiently to thoroughly excavate the decayed dentine; also, open the pulp chamber, so that every part of it can be distinctly seen with the aid of a mirror. Then, with a warm air cavity drier, reduce the cavity to as nearly absolute dryness as possible; this bleaches the dentine, affording a much better light in the cavity. I then place my patient in the best light practicable; and here let me say that I think the want of a good light is *one* cause, at least, of many failures in removing pulps and treating roots, as well as in many other dental operations. We *must* have light to see what we are doing. At first I operated by a north window, but in cloudy weather my light was not satisfactory; next, tried a west—this, in dark days, was good only in the afternoon; I then tried a south, which I liked much better than either of the others. For the past five years have operated by a south and west. Each window is supplied with two curtains, a green and a white, the former so arranged that they can be lowered from the top, or raised from the bottom, and the light admitted from the top or bottom, or both at the same time, if desired. The white curtains raise and lower in the ordinary manner. This affords the best light I have ever had, and enables me to see into pulp cavities, and find root canals with greater ease than any of the former arrangements. Especially is this the case in operations upon the lower teeth. By shading the lower half of the window, the light admitted from the top only can be reflected into the pulp cavities with a concave mirror, enabling one to see distinctly where it would be impossible with the light admitted at the lower half of the window. Perhaps the best instruments yet placed in the market for removing the pulps of teeth are the broaches with a single hook at the point. The temper of the steel bristles is certainly excellent, but have never found any with a point well adapted to the purpose. The barbed broaches are only useful in large straight canals. They lack toughness of temper, the barbs are too long, and too far from the point. They can be improved by cutting off the points at the first barb, filing down to a small size, leaving only two barbs nearest the point, and these very short. I think if the steel bristles had two or three very short barbs near the point they would be superior to any instruments yet devised for pulp extirpation. Great care is necessary in these operations to avoid the danger of forcing any of the pulp debris, or the point of the

instrument, or both, through the apical foramen. These nerve bristles referred to should be used very cautiously, as their small size, smooth round surface, and excellent spring temper, render them well adapted to follow small curved canals, and they pass through the foramina so easily in many cases that the membrane is wounded before we are aware of it. If any one doubts this, let him take a recently extracted tooth, and try the experiments, and he will find that in many of the buccal roots of the upper molars, even, these instruments will readily pass through the foramina half an inch or more. How much more easily, then, will they pass through the palatine roots of the same teeth, and also the large straight canals of the incisors and cuspids. As accidents of this kind always produce more or less irritation, and as prevention is better than cure, it is well to explore root canals carefully. In many cases considerable advantage is gained by reaming out the canals, especially where the pulps can be removed only in fragments. A reamer will scrape off the particles adhering to the walls of the canals, which a broach or hook will not do. Glidden's reamers, while not all that could be desired, are very useful instruments, and have aided me many times. The reamers recently devised by Dr. Talbot are also very valuable, and although I have not been able to accomplish with them all that the inventor claims they will do, yet would not like to be without them. The canals in the incisors, cuspids, and bicuspid, are not usually difficult to cleanse or fill. Neither are those in the palatine roots of the superior, and the distal roots of the inferior molars. The buccal roots of the upper molars being smaller, and usually somewhat flattened and curved, are often difficult to treat, and sometimes even to find. The mesial roots of the lower molars are also flattened, and the canals usually more or less contracted, resembling an hour glass in shape,—this contraction frequently resulting in two distinct canals. When this is the case considerable difficulty is experienced in following them their entire length, and perhaps in some cases it is impossible to do so. The right and left exploring instruments, with long, fine points, are valuable for finding these small canals. Frequently the canals in the buccal roots of the upper molars, are contracted near the pulp chamber, and if they are reamed out at this point, can be easily followed their entire length. For this purpose a three sided broach, with rather a soft spring temper

and a small round point, is often sufficient. Any reamer for this location must be short enough to allow its entire length between the open jaws, that the instrument may be used in the direction of the canals. Glidden's reamers may also be used in the same way by cutting off to the desired length and molding some sealing wax or modeling compound around the shaft for a handle. The canals should be thoroughly syringed with warm salt water after the pulps are removed. This is best done with the rubber dam still in position. After drying the cavities with spunk, I use fine tissue paper cut in triangular pieces and rolled into fine points for drying the canals, principally. These are easily used in all except the small contracted canals. The process is completed with the warm air cavity drier.

I do not usually fill the roots at the same sitting that the pulps are removed. Consider it safer practice to wait a few days, as some irritation may result from severing the pulp vessels, or some pulp debris may have been forced through the foramen. Prefer, therefore, to leave some cotton in the roots, moistened with carbolic acid or creosote, to render it antiseptic, and fill temporarily with gutta percha. Neither do I regard it good practice to leave a cavity open after extirpating the pulp, as the food and fluids of the mouth soon find their way into the canals, where they decompose, often causing pericementitis, and in any case making it necessary to do the work of cleansing all over again. For temporary fillings I use the common red gutta-percha, with the addition of enough pumice stone to render it sufficiently hard and brittle to manipulate easily. It is much less expensive than the white gutta percha and answers the ordinary requirements of a temporary filling. I fill roots with the white gutta-percha, rolled out to the desired size with a warm knife. It is often necessary to cut off the extreme points to prevent carrying it through the foramen. For the small tortuous canals I use a solution of white gutta-percha in chloroform. This, I find by experiments out of the mouth, can be carried with a fine bristle into surprisingly small canals. For some years I used this solution quite extensively, but the time required for hardening, the shrinkage, and the ease with which it is carried through the foramina in ordinary canals, are objections which do not exist in the use of solid gutta-percha. Considerable difference of opinion exists as to the necessity of filling these small canals at all—my

own opinion being that it is by far the safer way to fill all canals that can possibly be filled, even though they require reaming and enlarging for the purpose. Have many times removed fillings from abscessed teeth and found the larger canals filled, but the smaller ones left untouched. The fact that cleansing, treating and filling these, resulted in a complete cure, is some evidence at least that the neglected canals were the cause of the trouble. As an experiment, I have frequently filled the larger canals, leaving the very small ones to take care of themselves, filling the cavities temporarily, and after a few weeks removing the filling, and the offensive odor, which I have invariably found to be present, is sufficient evidence to my mind that such is not safe practice. Have often been asked if I fill three canals in the upper molars. Will say that I do almost invariably. Indeed, do not now recall a single case of a first upper molar in which I have failed to find and fill three canals, for at least eight or ten years, and but two instances of failure to find the third canal in the second upper molar, and perhaps three or four in the third, during the same period. I do not claim that these have *all* been filled *thoroughly* their entire length. This, as we all know, would in many cases be an impossibility; but have approximated thoroughness, as far as patience, perseverance, and my limited ability could do it. Am decidedly of the opinion, that if the profession generally felt that they were to receive a fee for these operations, commensurate with the time and labor necessary to be expended, greater thoroughness would prevail, and consequently more uniformly successful results be attained. The theory, that if the *end* of the canal is perfectly sealed, the balance may be left unfilled, while theoretically correct, is, I think, objectionable in practice, as we can seldom, if ever, *know* that the foramen *is* entirely closed. If it *does* leak, the open canal becomes a reservoir for the accumulation of moisture, which soon decomposes, and the gases thus generated escaping through the leaky plug, become a source of irritation to the surrounding membrane.

As previously stated, the treatment of an alveolar abscess depends upon the cause, and the condition in which we find it. If in the earlier stages of inflammation, and the cause is a dead or putrescent pulp, the thorough removal of the cause, with antiseptics left in the roots, and aconite and iodine applied to the gums, relief will generally soon follow, and an abscess be pre-

vented. Among the various means resorted to for the purpose of preventing suppuration, are leeches applied to the gums, hot foot baths and cathartics, often with beneficial results. I am of the opinion, however, that where the inflammatory symptoms are sufficiently severe to require constitutional treatment, aconite and belladonna will usually afford all the relief that can be derived from the use of cathartic medicines. The heat, swelling, redness of the parts, the hot, dry skin, full and bounding pulse, pain in the head, and thirst, which are usually present in such cases, are symptoms more readily controlled by aconite and belladonna than by any other remedies I know of. I prefer either Fleming's tincture of aconite or the German tincture. Of the former, I generally use half a drop at a dose; of the latter, one drop. The belladonna I prefer in the second or third decimal attenuation, in one or two drop doses. These, in severe cases, can be given in alternation every half hour for two or three hours, when the interval can be lengthened to one hour, and, as the inflammatory symptoms subside, to two hours. The common tincture of belladonna, usually kept in the drug stores, is unreliable. The best I have ever used is the German tincture, obtained from the homœopathic pharmacies. The local remedies principally used in the treatment of alveolar abscesses are creosote, carbolic acid, iodine, salicylic acid, and the aromatic sulphuric acid.

The treatment after the cause is removed consists in bringing the remedy in contact with the pyogenic sac, cauterizing its entire surface, to break it up and promote healthy granulations. This is accomplished by injecting through the fistula, where one exists, with a Farrar's syringe, or by pumping the medicine through the root canal, where it is possible, using cotton wound on a broach for a piston. It often happens, however, that no fistula has been formed, and it is impossible to force the remedy through the canal. It has been recommended, in such cases, to drill through the root. This, in perfectly straight roots, if carefully done, is not bad practice; but, as we can never know positively that a root has not some curve, such a course is always risky. It is a little over eight years since I abandoned this practice; at that time two teeth were lost from this cause—an upper bicuspid and lateral incisor. The roots of both these teeth having an abrupt curve near their apices, my drill came out at the sides.

I then decided to try cleansing the canals, treating with antiseptics, and trusting to nature for a cure.

When I state that no abscessed tooth has been lost since that time, where an opportunity has been afforded for carrying out my treatment, it will be inferred that the change has been a satisfactory one. The remedies which have given me the best results are the creosote of commerce (probably oily carbolic acid and creosote) and iodine. These I combine by dissolving the iodine in the creosote, leaving an excess of iodine.

After cleansing and drying as thoroughly as possible, I swab the canals with the remedy, using cotton wound on a broach for the purpose, leaving cotton in the canals saturated with the medicine, and sealing with a temporary filling. If the liquid is carried through the foramen, as is often the case, a burning sensation will be experienced. If the *liquid* does not go through, the vapors of the iodine will, if the cavity is perfectly sealed, unless the root is absolutely stopped. I treat these cases upon the hypothesis that where there is sufficient opening through the canal for the gases from a decomposing pulp to escape, the vapors of iodine will find an exit—I am not certain but the vapors coming in contact with the sac are quite as efficacious as the liquid, though where I *know* there is pus, I am not careful to prevent the medicine from going through in liquid form. On the other hand, where I doubt the existence of pus, I *am* careful to prevent the liquid from passing through the root, as an escharotic applied to the already inflamed membrane would likely result in suppuration. The vapors, instead of being escharotic, act as antiseptics and gentle stimulants to the membrane and weakened coats of the vessels. As an evidence that the iodine does find its way through the roots in some form, I will mention the fact that in nearly every case where a fistula exists, the patient complains of the taste of iodine until the fistula heals, although the cavity is filled as perfectly as I can fill it. Thinking perhaps my gutta-percha fillings leaked, I have filled, in some cases, with cement, and the taste of iodine continued. Where no fistula exists, soreness sometimes results from stopping up the cavity, and the patient should be instructed to return at once, or remove the temporary filling, if necessary. The cases in which trouble is most likely to occur are nervous, debilitated patients, confined by indoor employments. The operator should be governed by

the condition of the patient at the time of treatment, whether it will be safe to seal up the cavity or not. The menstrual period, in delicate ladies suffering from uterine diseases, and the first months of pregnancy, are conditions requiring extreme caution.

I find by experiments out of the mouth, that iodine will go through the roots where carbolic acid will not. This was tested by winding the roots with cotton, and imbedding all but the crowns in plaster. I am aware that the conditions are not the same as in the mouth, but the fact that the odor of the iodine was found upon the cotton where no trace of the acid could be discovered, is evidence that the vapors of the iodine found an exit through the apical foramina, where the acid did not. The principal objection urged against the use of iodine is that it discolors the teeth. Alcohol and carbolic acid have been used to wash it out. This they do by dissolving it, but at the same time it penetrates the dentine, leaving a slight stain. Aqua ammonia possesses the property of neutralizing the color of iodine; therefore, if the cavity is immediately washed with it, no stain remains. A colorless tincture of iodine is made by adding about one drachm of ammonia to one ounce of the tincture. In this proportion, the color disappears in about forty-eight hours. I have been using this, to a limited extent, for a few months, and think it will prove a useful remedy. It certainly seems to arrest the secretion of pus promptly. For injecting a sac through the fistula, I know of nothing better than an alcoholic solution of salicylic acid. This, if the root is properly cleansed and treated, and the patient is in fair health, will usually effect a cure. In those cases with large foramina, where chronic inflammation remains after the secretion of pus has been arrested, considerable benefit may be derived from the use of the tincture of hydrastis, calendula, or sulphate of zinc and sulphate of morphia, each five grains to the ounce. The cotton in the canals should be changed frequently during treatment, as, if left too long, it becomes offensive, causing irritation to the already weakened membrane. External poultices should never be used in the treatment of this disease, neither should an abscess be allowed to break upon the face. Where poulticing is necessary, a roasted fig applied to the gum, is sufficient. I stated that no abscessed tooth had been lost during the past eight years where an opportunity had been afforded me for carrying out my treatment. While this is true, I wish to

state distinctly that I have no idea that I can treat every case of this disease successfully. That I have been fortunate, I admit; but may fail in the very next case. I mentioned the fact reluctantly, and solely for the purpose of encouraging others to greater thoroughness and perseverance. I have two chronic cases under treatment at the present time which have given me considerable trouble, but both are nearly well, and I hope to save them. Will mention a case or two, which may be taken as an average of my cases and their treatment. Case 1st, June, '76.—Mrs. I., abscess right superior first molar. Tooth sore, face and gums swollen and very painful; had been under treatment for weeks. She had been told it would require from six weeks to three months to effect a cure, with doubt expressed as to the result. Applied rubber dam, carefully excavated the cavity, and found that an attempt had been made to extirpate the pulp, through a small opening in the pulp chamber, which was so far from being successful that the buccal canals had scarcely been touched. Spent half a day of diligent labor in cleansing these canals; syringed, dried, and treated with the iodine and creosote, as before described, sealing up the cavity as usual. Painted the gums with aconite and iodine, and dismissed the patient. In a few days the tooth was nearly well. I treated as before, and in three or four days filled the roots. In one week, filled the crown with gold. Last winter saw the case, and found it had given no trouble. Case 2d, April, '81.—Mrs. C., from an adjoining town, abscess of left inferior first molar, with pus discharging through fistula; also, pericementitis of right inferior first bicuspid. Was half a day cleansing these canals; treated and filled, temporarily, as described; came again in one week, and both teeth, apparently, perfectly well. Filled root in bicuspid, and changed cotton in molar, not having time, between trains, to fill the roots.

Occasionally chronic abscesses, occurring in debilitated patients, require something more than local treatment. It is well known that if an ulcer or canker patch upon the lip or cheek is cauterized while the patient is debilitated, it is made worse; but if a tonic is administered for a few days previously, one application of the caustic is usually sufficient for a cure. The same is true in the treatment of abscesses. This is illustrated in the following cases: A colored girl, with abscess of the antrum, was treated locally for some weeks, and at times it appeared nearly

well, but would again suppurate. A tonic of quinine and iron was prescribed, and the local treatment continued as before. From this time there was a marked improvement, which continued until a permanent cure was effected. A lady about seventy years of age, having worn an entire artificial denture for twenty years, was suffering from an abscess of the anterior portion of the superior maxilla, which had been treated by her physician for some months, local treatment being continued after coming under my care. This, like the former case, was cured only after the administration of a tonic. One more case I desire to mention, is that of a lady recently recovered from an attack of intermittent fever, and also debilitated by nursing a large healthy boy the second summer. An abscess of the left superior lateral incisor resisted all local treatment until a tonic was administered, after which one application of salicylic acid to the sac through the fistula effected a complete cure.

I have omitted, but wish here to state, that the only certain test I have ever found for the vitality of a pulp is the rhigolene spray applied to the tooth after it has been isolated by the adjustment of the rubber dam.

In conclusion, I will say that, aside from necrotic conditions, I think failures result principally from four causes, viz: imperfect cleansing of the pulp chambers and root canals, forcing foreign matter through the foramina, over medication, or the too frequent application of caustic remedies, keeping up the secretion of pus; leaving cotton too long in the roots until it becomes offensive, causing irritation; and finally, by not paying sufficient attention to the general health of the patients.—*Transactions Illinois State Society*, 1881.

THE DUTY OF THE HOUR.

BY J. W. CORNELIUS.

[A synopsis of a paper read before the Wisconsin State Dental Society, at its 11th Annual Session.]

THE profession of dentistry is one which, by its rapid advancement and the attainments of many of its members, has gained an enviable rank among the scientific arts. The world now fully recognizes that dentistry is a science, having its embodiment of principles. The nineteenth century, above all other

ages, has been noted for its many inventions; it has given us the steam power in its thousand fold applications, the telegraph, the telephone, the electric light, and innumerable other discoveries, all blessings to humanity.

In this age of progress, we are glad to notice, dentistry has advanced, year by year gaining a higher standing in the social and scientific world.

Fifty years ago your family physician was dentist, apothecary, surgeon, and nurse. He was called in for hydrophobia, for a broken leg, for toothache. The art of dentistry was in a very crude state. The spirit of the age has changed all this. To-day we send for a specialist. The surgeon and physician no longer perform the duties of a dentist. It is to the honor of the profession that a large number of practitioners have attained an average competency, and sufficient character and confidence to assert for themselves the claims of a liberal profession. Still, a great deal remains to be done to make our profession what it should be, to elevate it to the standard of requirement. It has been truly said that the ranks of the medical profession have, in a great measure, been kept pure by requiring those who seek admission to come up to a certain standard. No medical society will admit the applicant unless he comes up to the acknowledged standard. The same must be demanded of the dental profession. It has been urged, with truth, that the dentist must carry upward the standard of the profession, and plant it upon the broad platform of medical science, and claim for it the same respect and importance awarded to other branches of the healing art; and that, too, upon the same ground of thorough scientific education.

The fitness of young men to become students of dentistry is too little inquired into. We are entirely too careless in this matter, taking those into our offices who are not the masters of the most common rudiments of education. Too many who are tired of the farm or bench enter the profession, thinking it an easy and money-making one. This they sooner or later find to be a great mistake; but a small number succeed well, a few make a living, and a greater number struggle a while with disappointment, and too often poverty, and then turn to some more congenial business.

We need the very best native talent, out of which to make

worthy practitioners. The mind must be employed as well as the hands. There must be a solid educational foundation, mental qualification, and a line of study. Without these, there will be failure. The progress of the age demands a higher grade. The habit of thought and investigation is far more important to the student of dentistry than any acquired skill of hand. A skillful hand without a cultured brain will never make dentistry what it should be. The dentist, beside his mechanical skill, must have some knowledge of physiological and pathological conditions, in order to practice successfully. It is, in a great degree, owing to our encouragement that so many unprepared young men are entering our ranks. We have often thought that if the young flood of dentists were dammed up for ten years, the standard of dentistry would be greatly elevated.

We elevate the standard of the profession just in proportion as we select the proper material for students. Take no young man into your office unless he shows a fitness for the work. The public is fast awakening to the fact that dentistry requires more than mechanical skill. We should be enthusiastic in our calling; this is vital to all success;—the great starting point: Grasp all the means of improvement within reach, using them faithfully, with all the energy of our natures. Faithful, earnest, independent searchers after truth, determined to practice our profession liberally—this will do more to secure success than that narrow groove in which professional jealousy too often causes us to grovel.

Dentists, as a class, are not social enough. There is too much professional jealousy. We should treat our professional brother with more liberality, speaking of him as though he were at our side. If we all thus acted loyally to each other, much good would be done. Professional jealousy affects the heart much in the same manner that the ague does the body, and is often cured by the same medicine, arsenic.

The family of man is composed of teachers and pupils. A free intercourse with the honorable men of our profession, and frank expression of opinion, will do much to enlighten our minds and increase our skill. The time has arrived, and the interests of the profession demand, that every practitioner grasp all the means within his reach for self-improvement. Union is the grand element of success. Discussion is the average man's

school-master. Associations like ours are among the most valuable agents for the dissemination of knowledge. The spirit of inquiry and investigation engendered by these associations is a proof of the earnestness of the profession. At these meetings a broader, deeper social feeling is engendered. We are not only made wiser, but better men.

In dentistry, as well as other professions, there are bigots, and these parasites do much to hinder progress. It is a noteworthy fact that these stumbling-blocks to progress are rarely found at our dental associations.

Dentistry has progressed until to-day the medical profession extends the brotherly hand of fellowship, and bids us God-speed in the good work. That narrow-minded jealousy which so long separated the two professions is, in a great measure, of the past, and let us hope that this good-fellowship between the two branches of the healing art may continue until all recognize that dentistry is an important factor in medical science. Rush Medical College, of Chicago, recognizing this fact, did, at its last annual commencement, confer upon a brother dentist the honorary degree of M. D., and in flattering words was our science spoken of. The American Medical Association, at its last meeting, held in Richmond, Va., in May last, with such eminent men as Prof. Gross on the floor, warmly advocated the claims of dentistry as a science worthy the notice and attention of the Association. Truly, the world moves.

What has been done is but an iota of what the progressive men of our art will accomplish. It, therefore, behooves us, as members of a progressive calling, to gird up our loins and go to work with a renewed determination to be worthy laborers in our adopted profession. It has been truthfully said that the profession has been elevated from its primitive condition through the successive labors of innumerable minds; and it is alone by the continuation of such efforts that the stage now reached can be maintained, and additional advancement secured.

Did we confine our attention exclusively to our office work, and neglect these opportunities for a free interchange of expression, we should not only become narrow-minded, but the art of dentistry would retrograde, and we be the sufferers, as well as the community at large. It is a sorry fact that not one-third of the dentists of this State are members of our society, or attend

its meetings. We should make it a duty to insist that all worthy practitioners attend these meetings and take an active part in their discussions. They would soon find that they could not afford to stay away.

ORAL CHEMISTRY.

BY R. G. RICHTER, D. D. S., MILWAUKEE, WIS.

[Read before the Wisconsin State Dental Society.]

ORAL CHEMISTRY is one of the most important and interesting subjects connected with dentistry. It presents such a broad scope that it is almost impossible to do it even partial justice in an essay; but I shall crowd all I can in the space allowed me.

Oral chemistry, of course, treats of the different combinations formed in the human mouth by the oral secretions, the food, etc., either single or combined with the elements or proximate principles that compose the teeth, with which we are all familiar, and which it would be superfluous to mention here. In a normal condition we have very few, if any, such combinations, and we find the teeth in a healthy condition; but when the secretions change, and with the aid of food form acids, these acting upon the mineral portions of the teeth cause decay, as we shall see further on. The saliva, though normally neutral or slightly alkaline, is sometimes mildly acid from the secretion of acid mucus during such diseases of the mucous membrane as are caused by dyspepsia, gastritis, etc., and, instead of being frothy, will be found to be stringy and to draw out into long threads. The contents of the mouth are also often acidulated by fruits and medicines, but their direct action is only to slightly corrode the surface of the teeth and destroy their lustrous appearance. Where decay, or, more properly, decomposition, most frequently occurs is at points which would be most exempt if this was the cause. Decay most frequently occurs at points where the enamel is imperfect, and where foreign substances are lodged, such as fissures, proximal surfaces, and at the free margin of the gum on the buccal and labial aspect—not on the lingual, where the tongue keeps them comparatively clean.

Contained in the food are many organic substances, both of

the hydro-carbonaceous and nitrogenous class, which, in the presence of warmth and moisture, will take on fermentation or putrefaction, as the case may be. These processes, though closely allied, have each a distinct mode of action.

Fermentation has for its subjects the hydro-carbons, and is generally dependent on the presence of a putrescing nitrogenous body. Its object is the rearrangement of the atoms, forming generally not more than two compounds.

Putrefaction takes place only in molecules containing nitrogen, the atoms of which are liberated, to reunite according to their affinities, forming various compounds.

The oral cavity presents all conditions necessary to the first process, warmth and moisture; and not only the ptyalin of the saliva, which itself is a ferment, but very often decomposing nitrogenous matter is present. Glucose, from cane sugar or starch, etc., with water and sugar of milk, readily ferments under these conditions, and is formed into acetic or lactic acid, as the case may be.

The glucose, $C_6H_{12}O_6$, (it will be necessary here to give the symbols and equations) contains the exact atoms for the formation of acetic acid, $C_2H_4O_2$, by a rearrangement; but it is probably here, as elsewhere, first converted into cellulose and then alcohol, as follows:

Starchy substance undergoing fermentation is first changed into cellulose, and this into alcohol and carbonic acid, thus: $C_6H_{12}O_6 = 2CO_2 + 2C_2H_5O$. Now alcohol again undergoes a change, and is split up into aldehyde and water by the addition of one atom of oxygen, thus: $C_2H_5O + O = C_2H_4O + H_2O$. The aldehyde, by further addition of an atom of oxygen, is converted into acetic acid, $C_2H_4O + O = C_2H_4O_2$.

This is the process of acetous fermentation that takes place in the mouth, especially in young children, and is supposed to be the cause of the green stain by its action on Nasmyth's membrane.

Lactic fermentation is brought about by the sugar of milk, $C_{12}H_{22}O_{11}$ and an atom of water H_2O , being converted into lactic acid $C_3H_5O_3$.

The sugar of milk, before assuming the form of lactic acid, probably passes through the condition of glucose; for ordinary glucose, when dissolved in milk, ferments into lactic acid along with the milk sugar originally present. In this lactic ferment-

tation of glucose, if the temperature be as high as 104° F., lactic acid is no sooner formed than it is converted into butyric acid, carbon dioxide and free hydrogen, thus: $2C_3H_6O_3 = C_4H_8O_2 + 2CO_2 + 2H_2$; but as this temperature is several degrees higher than the normal temperature of the mouth, this change seldom takes place, except during high fevers.

In the putrefaction of animal tissue, which, broadly speaking, may be said to consist of albuminoids and fats, the former always give way first; their decomposition is a most complex set of successive chemical reactions, leucine, tyrosine, fatty acids, and many other things appearing as primary, and ammonia, sulphuretted hydrogen, hydrogen and nitrogen as secondary productions. The fats are decomposed less rapidly into fatty acids and glycerine.

The composition of nitrogenous substances being indefinite, the liberation of the elements of different molecules would be indefinite and variable as to proportion.

It will, therefore, be necessary only to say that under this decomposition of nitrogenous substances, which is almost always going on there, ammonia, NH_3 , is formed, and we will see how nitric acid is formed out of this in the mouth. The nascent oxygen which, under such conditions, is always present in the mouth, will take away its equivalent of hydrogen from the ammonia to form water, and thus one atom of nitrogen and hydrogen is freed. Now the nascent oxygen will combine with the nitrogen and hydrogen which were freed, and in this way form nitric acid, NHO_3 .

This acts upon the teeth immediately, where it is formed, or not at all, and by combining with the carbonate of lime and all other constituents of the tooth, causes the characteristic rapid white decay, $2HN_3O + CaCO_3 = Ca(NO_3)_2 + CO_2 + H_2O$.

It is almost impossible to detect its presence in the mouth, as it disappears into the tooth the moment it is formed, or is as quickly neutralized by the ammonia. Now, after this decay has once commenced and penetrated into the dentine, an alkali may cause further decay by decomposing the animal matter of the dentine, which forms about 28 per cent. of it.

Sulphuric acid, which I will next consider, is formed in the mouth in the following manner, by the decomposition which is constantly going on there: The sulphur, which is one of the constituents of food, and also of the mucus, will, when liberated,

form with the nascent hydrogen, sulphuretted hydrogen, which may often be smelt in the breath. This will decompose, in the presence of the nascent oxygen in the mouth, and form sulphuric oxide, SO_3 , and this, having a strong affinity for water, H_2O , will take up one molecule of it and form sulphuric acid, thus: $\text{SO}_3 + \text{H}_2\text{O} = \text{H}_2\text{SO}_4$, sulphuric acid and this acid acts upon the carbonate of lime to form the sulphate of lime, thus: $\text{CaCO}_3 + \text{H}_2\text{SO}_4 = \text{H}_2\text{O} + \text{CO}_2 + \text{CaSO}_4$, the sulphate of lime, which is insoluble in the saliva, and thus helps to protect the tooth from further attacks.

Sulphuric acid may arrest decay after it has once commenced by dehydrating the animal constituents of the tooth. It takes away the hydrogen and the oxygen and leaves a black, dry, hard, carbonized substance, which protects the tooth from further decomposition. Although many acids are capable of destroying tooth structure, as has been observed by experiments in the laboratory, only a few produce conditions similar to those which are produced in the teeth in situ. These are the two above mentioned and the hydrochloric acid.

This acid is generally formed in the mouth in the following manner, from salt or the chloride of sodium, which is present in animal flesh and superadded when the flesh is cooked. This chloride of sodium may be decomposed by the sulphuric acid into sodium sulphate and hydrochloric acid, or by the nascent hydrogen, which has a stronger affinity for chlorine than it has for sodium, uniting with the chlorine and thus forming the same acid.

This acid is also formed by electricity in the mouth, as salt is capable of developing electricity by coming in contact with amalgam fillings.

When the electric action over an amalgam filling is once set up, salt is decomposed and the chlorine, thus set free, will at once unite with the nascent hydrogen and form HCl , and this once formed has a tendency to form more by increasing the electric action.

Hydrochloric acid does not decompose the phosphate of lime, but simply holds it in solution, while the carbonate is decomposed thus into calcium chloride, carbonic acid, and water: $\text{CaCO}_3 + 2\text{HCl} = \text{CaCl}_2 + \text{CO}_2 + \text{H}_2\text{O}$. This acid leaves in the cavities more or less of the organic compounds, in a gelatinous form, and this very likely helps to produce the brown variety of caries. But taking into consideration the frequency of this variety of caries compared

with the chances of its production in this way, I believe it to be produced more by the alternate actions of the sulphuric and nitric acids than by the hydrochloric alone.

Such a hypothesis is easily assumed if it is allowed that both acids are found in the same cavity, as undoubtedly they are, for a cavity of decay in a tooth is never formed by the action of any one acid alone. There always is one acid that commences the decomposition, but as soon as this is commenced and forms a lodging for food, other acids are formed out of it, and these in turn act upon the tooth and further decompose it.

DENTAL EDUCATION AND MECHANICS.

BY CALVIN S. CASE, D. D. S., JACKSON, MICH.

EVERY dentist who aims at the highest perfection of his art should strive for a goal far beyond that which is generally understood by "operative and mechanical dentistry;" for this but opens the gate to a broader field, whose difficult paths he may any day be called upon to tread, and through whose illimitable winding are mysterious workings of disease that awaken to health but at the touch of skill and education. He should therefore leave no stone unturned that will increase his knowledge and give him the requisite ability to take charge of all pathological conditions of the mouth and its immediate relations.

Dental or oral surgery of to-day means something more than the saving of natural teeth, and the supplying of artificial ones, for around this nucleus arteries have extended out in all directions; and, while drawing nourishment from both medicine and surgery, it has steadily but surely driven them back from long trodden ground, obliging them to acknowledge, however grudgingly, the superiority of special ability;—the triumphing influence of a force directed with persevering energy upon a limited and somewhat poorly fortified locality. The influence of this force, moreover, lies not so much in its preponderance as in the *quality* of which it is composed. It is what might be termed that happy meeting and commingling of mind and matter, for those who arrive at the highest degree of eminence in the dental profession possess both active brains and nimble fingers;—brains which have

the power and capacity for the deepest channels of knowledge, and that more indispensable faculty, ingeniousness; hands firm, with the delicate touch of an artist, and that more essential power of giving to ideas their physical forms. However perfect the one, unaided by the other it can never hope to keep pace with the tide of *dental* progress.

There are dentists all over the country who, perhaps, have a remembrance of being confounded some time in the past with Tomes or Harris, but who seldom look into a dental periodical now, because it contains so much that is irrelevant and impracticable to their uneducated comprehension;—things which they half believe are written to confuse and astound rather than instruct. They use “carbolic” with a surprising and indiscriminate freedom, and usually display other medicines whose demand and medicinal action are very imperfectly understood, their success in dentistry depending almost entirely upon their mechanical ingenuity and skill, beyond which they are lost “like little wanton boys who swim in bladders in a sea of glory, but far beyond their depth.” They deserve no sympathy, for their cleverness is a gift rather than an acquirement, which they fail to carry to its highest perfection, and themselves to an enlarged professional capacity, by an education within the reach of every man who perseveringly applies himself. Yet these men have their place in the hearts of their patients, who join with them in attributing their failures to the conditions of disease and the inadequacy of dental art. Their work, too, is often excellent, which, acting as a confirming evidence of their standing, makes them as a class the grand obstructors of dental progress.

On the other hand, there are dentists who are highly educated and actively interested in progress, and especially in those branches which give this a right to be called a profession; studious, hard working men, who would make accomplished physicians, but who, unfortunately, are scantily endowed with those indispensable qualifications—art, ingenuity and mechanism; and in consequence, not only fall far short of perfection as mechanical operators, but have no distinct individual cognizance of anomalous demands or ability to successfully accomplish those higher orders of operations which require the greatest nicety of judgment and skill. Between these extremes, with varying degrees

of talent, lie the mass of the dental profession; composed, however, almost entirely of men of mechanical ability; whatever other knowledge they may have acquired. And it is worthy of consideration that in this particular we differ from the mass of the medical profession. The student in the laboratory is urged onward or discouraged in proportion to his innate mechanical capacity, almost regardless of other capabilities, while a pursuance of dentistry, with its multitudinous differing demands, is calculated to develop and cultivate this latent ability. In this fact lies the great strength of the dental profession, *to widen its field of labors*; for it is the foundation principle of success, and seems the peculiar qualification that is most needed in all surgical operations; and especially in deformities, abnormalities and fractures, that require the aid of ingenious mechanical appliances.

In general surgery a few arrive at a position of eminence, and these are always found to possess inventive genius, and a fair knowledge of the laws of mechanics; and many in the medical profession who style themselves surgeons fail to arrive at real excellence in the art, because of deficiency in these qualifications rather than in education or experience.

In our aspirations, therefore, for the *appearance* of exacting professionalism and learning, that we may have a greater claim to the questionable advantage of being formally recognized as a specialty of medicine, let us not underrate the value, nor lose sight of these most important and necessary factors—mechanical ingenuity and skill; for they have always been the keynotes to our success and unprecedented advancement, and are destined to become the essential ingredients that will especially qualify the dental profession for a field of labor of which we are now but at the border land.

Dentistry in its completest sense is what we individually make it, by a perfect knowledge of all its requirements and the real excellence of our work, and not a something to be divested of essential principles when found to be within the scope of the uneducated; nor is it a thing to be bolstered up by some work of the imagination, on a high pedestal, and labeled superior, scientific knowledge and learning, for fear that we may be mistaken for a body of tradesmen and mechanics. Rather let us be proud that we are a fraternity of individuals with distinctive features

of character and ability, sure to arrive at a position of eminence that will *honor* any profession who may choose to *claim* us as a specialty.

PROSTHETIC DENTISTRY.

BY D. L. OVERHOLSER, M. D.

[Read before the Indiana State Dental Association, June 30, 1881.]

UNTIL recently that department of our calling pertaining to artificial teeth was generally designated as Mechanical Dentistry. This, by many, was justly considered an unfair discrimination against a highly laudable branch of art. Within a few years partial justice has been done this subject by the discontinuance, to some extent, of the term Mechanical Dentistry, and the introduction, instead, of the more classic term, Prosthetic Dentistry. This latter term, as I understand it, simply means that part of dentistry having reference to the substitution of artificial for natural teeth. There is nothing in the term to denote its status as belonging to either mechanics or art. This is as it should be, for, as a matter of fact, it may belong to either; practically, we see considerable dental substitution that is truly artistic, and I fear a good deal more that is nothing more than mechanical.

As members of an association having for its object the elevation of the profession, it becomes us to consider the causes, and, if possible, find a remedy for this preponderance of the mechanical over the artistic, of ugliness and deformity over beauty and symmetry. The principal cause of this evil I believe is shortsighted greediness. Under its influence young men, instead of giving years of patient study and training in a private office, and a thorough course at a dental college, too often rush into practice half prepared for the responsibilities they assume, and starting out with mean conceptions of their vocation, ever remain on a low level; although it is important to note that the subsequent course of such men is usually greatly influenced by the examples of their preceptors. These things, however, are not confined to this class; even among graduates of our dental colleges are to be found those whose work is very far from artistic.

There are several things necessary for the successful prosecution of any fine art. First among these are skill and taste, which generally are the result of much study and experience. In addition to these, *time* and *patient care* are indispensable. I have seen a street artist make crayon portraits at the rate of one in five minutes for twenty-five cents; but while he demonstrated his possession of a remarkable capacity of a certain kind, the pictures were not worthy to be entitled works of art. In these days of steam dental establishments and five-dollar sets of ready-made teeth, those indispensable factors, time and care, have been too much lost sight of—the main point being to turn out the work as quickly as possible, and by advertising a little lower prices than others charge, to keep the factory going. One example like this, showing signs of active business, is quickly followed by several others, who perhaps get down a little lower, both in price and quality of work, and thus in some communities dental art is left without a representative, being superseded at the behest of blind avarice, by dental mechanics or worse. How shall the evil be remedied? I answer: Let the profession observe a halt; let it “down brakes” on this whirling train of competition in speed and cheapness, and return to first principles. Let it unite to magnify brains rather than steam in the dental office; excellence rather than speed. Let competition be based on high standard of work rather than low scale of prices. Says one: “Your theory is very nice, but it will not work in practice. I am surrounded by men who do cheap work, and unless I do the same I will be left without patronage.” On the contrary, I contend that the mass of our people want good work, and will pay a fair price for it, no matter how cheaply inferior work is offered; hence, any one who will work up to a high standard will, in the end, get proper compensation. If, however, any one expects to gain confidence and patronage on the strength of high charges without corresponding quality of work, he will be severely disappointed, as he deserves to be. To be more specific, I will mention a few additional points which I consider essential to the maintenance of a high standard in prosthetic dentistry: First of these is a large assortment as to sizes, forms and shades of teeth, of the best manufacturers, to select from. Without this it is impossible to do justice to the ever varying cases that present. The next essential point is that the dentist have the patient before him during at

least a portion of the time while arranging the teeth, so that they may be tried in the mouth, and such adjustment made as shall satisfy the cultivated tastes of the operator; also to insure their correct articulation in the mouth. This is a point which I have reason to believe a vast majority of dentists neglect, and if questioned by a careful operator in regard to their success, they are wont to say, "O, I have very good luck; seldom have to make a set over." If there is any possible degree of success it may well be called luck; but luck is a very poor dependence in the practice of dentistry, and very many of these luck plates could be satisfactory only to persons having a very low standard for work; besides, the tendency of this kind of work is to constantly reduce the standard. A set of teeth, having been set up by guess and trusted to luck, is placed in the mouth. It is not really what it ought to be, or what the operator was capable of making it; but some of the defects are unalterable unless the whole case is worked over, which is too much trouble without pay, and so it will have to do. Repetitions of these things are frequent, and their tendency is necessarily to degrade the standard. To summarize somewhat, I hold that prosthetic dentistry affords opportunity for the development of the best taste and skill in the profession; and that a very large class of our people want the best work, and will cheerfully pay for it; that in denying this want we prove unworthy of an important trust; that in conscientiously supplying it, we benefit our fellow men, magnify our calling, and, in the end, advance our own material interests.

DENTAL STUPIDITY.

BY DR. J. A. ROBINSON, JACKSON, MICH.

WHEN modern dentistry began, about half a century ago, there were few engaged in it as a specialty, even in large cities. The profession was kept in high hands, being then almost exclusively among persons who had been, or were engaged in the practice of medicine, a profession that cost time and labor; and whatever costs much, as a rule, will be highly valued. As years went by, and the practitioners were multiplied, and the necessities of the people demanded more service, the ranks of the profession

were filled up with persons who were what might be called artizans or skilled mechanics, until, at this time, there are probably more than two-thirds of those engaged in the calling who have not been fitted, by their education or early training, to hold it as sacred a calling as those who first engaged in it as a specialty of the healing art. In looking over the "Announcements" of the Dental Colleges this year we find the requirements of students for D. D. S. to be more strict than ever before, which is a good omen. Those who expect to enter any profession should first "sit down and count the cost;" for a profession differs somewhat from a trade. Our profession is a compound of art, genius, mechanics, and education. Genius is untaught, intellectual instinct. It does not make rules, but applies them unconsciously. Mechanism is conformity to known rules specifically applied, the following of specific rules, while art is formative imitation fully developed. It is previous effects, developed through the organism of the eye, and muscular training. Art and mechanism can be taught—genius, never. Education comes by hard labor. The clinics, to students in the dental college, are what apprenticeship is to the mechanic.

It is a hopeful state of things when students are required to pass through examination before receiving diplomas; but from what we see every day, from recent dental graduates, we fear the lessons of the college have not sunk deep into their hearts. The towns and villages are full of advertisements of "cheap dentistry," and "low-priced dentistry," by persons who have the D. D. S. appended to their names. This is not so in the practice of medicine. There may be, and is, competition among physicians, but not in cheap prices.

The effort on the part of some persons to degrade artificial dentures promotes this strife in cheap dentistry more than any other one thing. The man who *operates* is master of the situation, and the person who degrades any part of the profession, injures the profession as a whole. It is painful to know it comes from competent persons and good operators.

There are certain things that tend to this state of society among dentists; and the first and most potent is lack of moral character and courage, and faith in the calling. No man can impart to another what he does not himself possess; and no calling will be respectable that is bickering, and caters to a bickering public.

Professional character should be above strife in prices. In filling teeth, while gold is undoubtedly the best thing yet discovered, there is a substitute that will meet the wants of the poor, that I fear has not received the attention of good operators that it so well deserves. I allude to Felt-Foil. It will meet a want that nothing else will so fully supply. The directions for using that accompany the package, suggest "blunt, smooth-pointed instruments;" while my observation and experience show me that *coarse, serrated instruments* interlace the fibres into a more solid mass than any results I have been able to attain with smooth points, and fillings thus made can be finished with smooth points, and are better than those made with any other. Tin has been neglected by the profession, as a rule. It has certain qualities that seem to be antiseptic, and sometimes preserve teeth that are feeble as well, or even better than gold; and, in the hands of unskilled operators, will save the operator and the profession from failure, which is sometimes considered a disgrace. Tin, (this old and much neglected material for filling teeth), while it requires full as much care and muscle to make it successful, is far more reliable than any of the plastics now in common use among the profession. Suppose it does cost time and labor? the young practitioner has plenty of these to give. No Periwinkle can ever become a good dentist. Let the fresh graduate write a *thesis* every week, (even if he consigns it to the waste basket or the stove), on some subject pertaining to his profession, and he will be improved himself, and the scandal of low prices will be blotted from the history of an honorable and useful calling; and the stupidity of *cutting*, that has almost ruined the profession, will become a thing of the past, and be blotted out forever.

Among the diversity of things that tend to destroy our usefulness as a profession is the "divorce suit," being renewed by some meritorious operators, of which Dr. Metcalf seems to be the present *attorney*. Now divorces are an abomination, even taken at their best. The same arguments that will apply to the dental profession will apply to the physician and the surgeon. A physician is a person who prescribes remedies for diseases. A surgeon is one who performs manual operations, externally and internally, in a mechanical manner, and hence we see *physician* and *surgeon* in the same card of the M. D., as a person who is expected to perform cures for the various diseases and accidents

that befall humanity. Who of us that have watched the daily reports of those who have attended the President during the past few weeks, and have felt the burden lifted from our sad hearts every time his case was reported favorable, and have not felt comforted that he was in charge of the *physicians* and *surgeons* both, and that those attainments were combined in one and the same person? No! the thing savors too much of secession; and it will divide a most harmonious whole. And if persons expect to be received more heartily by the medical profession because they cut loose from artificial dentures, they deceive themselves. A man is now, and always will be, received into such position and society as he is fitted by nature and by culture to occupy; and the neighbors know, oftentimes, where that place is, even better than he does himself. Besides, what becomes of the children of divorced parents? If this separation should take place, you will find ten "dental peddlers" running about the country where you find one now, and many of them with each a D. D. S. attached to his name; and the annoyance will be as great as the vagabond children that run about our streets; and the better class will be forced, in the end, to soil their delicate fingers and touch the unclean things, or be obliged to live with them in their dirt and disgrace. If the yeas and nays are called, we say No!

"Better to bear the ills we have,
Than fly to others that we know not of."

I have written this protest as a matter of duty I owe the most beautiful of all the professions, and one I have enjoyed for nearly half a century.

REMARKS ON THE PREPARATION OF CAVITIES.

BY B. G. MARKLEIN, D. D. S., MILWAUKEE, WIS.

[Read before the Wisconsin State Dental Society.]

THE information and the rules given, and the principles and practice laid down and advocated in our standard text books, are so vague and indefinite on the subject under consideration, and very often entirely in contradiction with the physical laws of the teeth, that it is not at all surprising that we have almost as many departures as we have individual practitioners; for repeated fail-

ures of apparently well-performed operations will necessarily compel the conscientious practitioner to try some new method, but generally with no more satisfactory results than the previous ones. And in this way we change from one departure to another, each failing in turn to accomplish the desired object, viz: the preservation of the teeth, until at last we have gone through the whole list of the different methods mentioned in our text books or advocated in our dental journals. And the result of all this is that we are no nearer the solution of the mystery than we were in the beginning.

Now, all this might be avoided if we could have some definite rule to be governed by in each of the different kinds of operations—a rule so definite and plain, and in such harmony with the physical laws of the parts to be operated upon, that the results possible are attainable only by following the same. Sometimes, however, theories apparently the opposite of what ought to be advocated are productive of incalculable good in the right direction. For instance, the permanent separation system of Dr. Arthur has demonstrated, beyond a doubt, that the teeth ought to be kept separated after caries has made its appearance on their approximal surfaces, or it will be almost impossible to preserve them, or to prevent the recurrence of decay by filling, even if the operation is performed in the most perfect manner. Although the method advocated by him very often fails to accomplish the very object for which it was performed, and it is really very surprising to find operators at the present time who still advocate and practice the same.

A great deal has been said about filling materials being, or not being, in harmony with tooth structure, considerable of which is true, particularly in cases where the pulp is exposed, or nearly exposed; for in such cases the preservation of the tooth and the comfort of the patient depend, at least to a great extent, on the compatibility of the filling material with tooth structure and other tissues with which it may necessarily come in contact. But very little has ever been said about the preparation of cavities in harmony with the physical laws of tooth structure. This may seem unnecessary to some particular departurists who claim to overcome all obstacles in the line of failure with some particular filling material. But time and experience have demonstrated that these theories and materials are not absolutely infallible, and that

the success of the operation depends largely upon how, when and where they are used.

While we admit the usefulness, and sometimes necessity, for all the different filling materials, it still remains an open question whether or not we can violate Nature's laws with impunity in the preparation of cavities for the reception of filling without greatly diminishing our chances, if not altogether jeopardizing the preservation of the tooth or teeth operated upon. In order to make this more clear and comprehensible, let us take into consideration the least mentioned in our text books, yet perhaps one of the most important of all dental tissues, the enamel; a seemingly semi-vitreous substance, which covers the crown and extends to the neck of the tooth. It is the hardest of all animal substances, is generally of a pearly milk-white color, and extremely smooth and glossy on its surface. Like tooth-bone, it varies in density, being much harder on some teeth than others; it is thickest on those parts most exposed to friction, as on the protuberances of the molars, the cutting edges of the incisors, and the cusps of bicuspid and cuspidati, and is thinnest towards the neck. The structure of the enamel is fibrous, its fibres radiating from the center to the surface of the tooth—an arrangement by which immense strength and power of sustaining great pressure are given to it.

In describing the microscopic structure of the enamel of the human tooth, Professor Owens says it consists of long and slender, solid, prismatic, for the most part hexagonal, fibres of phosphate, carbonate and fluoate of lime, which are essentially the contents of extremely delicate membranous tubes, originally subdivided into minute depressed compartments or cells, of which membranes scarcely a trace can be detected in fully formed teeth. The fibres are arranged closely together, side by side, with occasional narrow angular fissures or interspaces, which are most common between the ends nearest the dentine; their general direction is perpendicular to the surface of the dentine, where the ends of the prisms are fixed in shallow depressions. The opposite and larger ends form the exposed surface of the enamel. The fibres proceeding to the horizontal, masticating surface, are therefore vertical. The greater number, which are directed to the circumference of the crown, are horizontal, or nearly so; every fibre, as a general rule, having, like the tubes of the dentine, that direction which is best adapted for resisting either the external

force of mastication or the effects of lateral pressure. Besides the minute pits corresponding with the inner ends of the enamel fibres, the outer surface of the dentine sometimes presents larger depressions.

The enamel fibres describe a flexuous course, the curves being stronger and shorter than the primary curves of the dentinal tubes. The parallelism of the fibres continues over a much smaller extent of any part of the enamel than that of the calcigerous tubes in the dentine. In some parts of the enamel they curve in opposite directions to one another, like the vane of a feather. Sometimes the fibres may be traced through the entire thickness of the enamel; where they fall short and where the larger fibres diverge from each other, shorter complimentary ones fill up the interspaces. Each fibre is one-five-thousandth of an inch in thickness, and is marked throughout its entire course by faint, close set, transverse striæ. When a section of enamel includes several fibres in thickness, certain of the overlapping curves intercept a portion of the light, and occasion the appearance of dusky, brownish waves. Another appearance, more immediately related to the formation of enamel, is produced by lines crossing the enamel fibres parallel with the outer margin of the enamel, but not always parallel with that attached to the dentine. These lines are not of equal clearness, but are very nearly equidistant, being about one-two-thousandth of an inch apart. They are more plainly seen in transverse sections of the crown than in longitudinal sections, and they have the same relations to the fibres of the enamel which the contour lines of the dentine bear to the calcigerous tubes. Without doubt they indicate, in like manner, strata of the segments of the fibres and stages in the formation of the substance. Where these strata, which are arranged very obliquely to the vertical surface of the dentine, cross out upon that surface, they occasion those waves, transverse, annular, delicate markings which Leuwenhock noticed upon the exterior of the enamel, and which he supposed to indicate successive stages in the protrusion of the tooth through the gum in taking its place in the dental series.

Mr. Nasmyth has demonstrated with the microscope that the enamel of the human tooth, as well as the dentinal part, is cellular. Each cell is of a semi-circular form, and the convexity of the semi-circle looks upwards towards the free, external position

of the tooth. Thus, by this most peculiar structural arrangement, a capability of resisting mechanical force is given to the enamel, which its simple, fibrous structure would wholly fail to supply.

There can be little doubt, then, that the enamel is formed by the development of elongated cells, or cylindrical columns formed on the inner surface of the enamel pulp. Here, as in the dentine, the germinal matter is converted into formed material, which is the organic basis into which mineral matter is deposited in a direction precisely the reverse of that which takes place in the dentine, *i. e.*, in the dentine, calcification takes place from without inward; in the enamel from within outward, though in each case commencing at the point most distant from the respective pulps; the enamel pulps sustaining precisely the relation to enamel that the dentinal pulp sustains to dentine.

From the foregoing description of the enamel, we can easily arrive at the conclusion that the structural arrangement and formation of the enamel is such that just by that particular arrangement of the enamel fibres, or prisms, the greatest strength and amount of resistance possible are attained. And any tooth that has failed to withstand the deleterious and injurious influences with which it is constantly brought in contact, with the best of all natural structures in perfect health to protect it, will necessarily have to succumb to the same injurious influences if it is wholly or in part deprived of this protection by corundum disks, or separating files. Dr. John Harris says "filing the teeth is one of the most important and valuable resources of the dental art; it is one that has stood the test of experience, and is of such acknowledged utility as to constitute, of itself, in the treatment of superficial caries on the lateral surfaces of the teeth, one of the most valuable operations that can be performed on these organs. This is only true, however, in cases of incipient decay, and the removal of the disintegrated tissue by any other means will be found just as efficient and valuable for the preservation of the remaining tooth structure as the file; more depending on how the operation is performed than upon the particular kind of instrument used.

In deep seated caries the operation of filing, or separation by means of disks of any kind, in the majority of cases, is productive of more harm than good, for the simple reason that it leaves, at

least, some parts of the *enamel* prisms, or fibres, in such a condition that it is almost certain that decay will again occur. To substantiate this assertion it becomes necessary to refer back to what has been said in the beginning of this by Professors Owens and Nasmyth, namely, that the enamel is formed of elongated cells of fibres, and that these are arranged in layers side by side and in such a manner that only the *ends*, but in no case whatever the sides, of the enamel rods or prisms are exposed to the deleterious influences of the fluids of the mouth; and the very fact that Nature *never* exposes the sides of these prisms to the fluids of the mouth is sufficient proof that they never ought to be left unprotected, whether the place operated upon is in the crown of a molar, the approximal surface of a bicuspid, or the labial surface of an incisor.

The preparation of a cavity of decay in the teeth in the mouth for the reception of a filling is generally considered to be so simple, and of so little importance, that a great many operators perform this part of the operation in such a rough and careless manner that, no matter how well the filling may be inserted and finished, the operation must necessarily be a failure. Every cavity can, and ought to be, so carefully prepared and finished that every particle of disintegrated tissue of enamel is thoroughly and perfectly removed, and finished in such a manner that it will not alone retain the filling, but also be of such form, and the edges of the enamel so shaped and finished that where the sides of the enamel prisms have become exposed, they can easily and permanently be protected by the filling. The reason for this is very plain: for the microscope has revealed the fact that the enamel is not one hard, solid, homogeneous, but rather a fibrous mass, and that, according to Professor Owens, Tomes and others, the fibres are arranged closely together, side by side, with occasional narrow, angular fissures, or interspaces, which are most common between the ends nearest the dentine.

In conclusion, let me say that every new theory, every original thought on this subject, whether in the right or wrong direction, helps ultimately to clear up the mystery and point out to us the right method to pursue. Yet it does not necessarily follow that the views of any one, or even more persons, ought to be accepted as evidence unless they can prove the truth of such assertions by facts.

Correspondence.

"I charge you that this epistle be read."—PAUL.

Editor of the Ohio State Journal of Dental Science.

THE following is reported as having been offered by Dr. Metcalf, of Kalamazoo, at the meeting of the Michigan State Dental Association, held at Detroit in March last :

"WHEREAS, The manufacture of artificial dentures has become so simplified that their construction is no longer properly any part of dental surgery, but in connection therewith tends to debase the profession, therefore, it is hereby

Resolved, That instruction in the so-called mechanical dentistry should be no longer any part of the curriculum of the dental department of the University of our State.

Resolved, That the President of this Association and the Board of Visitors to the Dental Department of the University are hereby instructed to make all proper efforts to have the chair of Mechanical Dentistry abolished."

Upon which your correspondent feels constrained to remark that it is ill-timed, ill-advised, and without excuse. Ill-timed, in that now, if ever, mechanical dentistry needs elevating from the slough of despond into which it has fallen by the good graces of professional operators; ill-advised, in that it seeks to destroy what little of good we have left, and gives us nothing in return; without excuse, because our patients do not demand it, and it would be a great and grievous wrong to the whole people.

The premises, as stated in the preamble to Dr. M.'s resolutions are false to start with. The manufacture of artificial dentures has not become simplified. It does not require a higher degree of skill or better manipulative ability to properly fill a tooth, or perform any of the other ordinary operations classed under the head of operative dentistry, than it does to properly make a set of teeth, using gold or platinum, with continuous gum. Both are mechanical operations, the one performed within the mouth, the other out of it. The latter requires the exercise of a

higher degree of æsthetic taste, a better judgment, and quite as good manipulative ability as the former. Is it nothing to Dr. M. that his patients shall be compelled to wear badly fitting, bungling pieces of filthy rubber or celluloid, causing absorption of the alveolar ridge, and disease of the soft tissue? He would shut the doors of our dental colleges against any one seeking more knowledge or better skill than that possessed by the *Cheap Johns*, who, be it said to the shame of the profession, have appropriated to themselves one-half of our legitimate calling. This has largely been brought about by a certain class of self-styled, exclusive operators, itching for recognition at the hands of the medical profession, and those who delight, at our Dental Associations, to get up and state that theirs is wholly an operative practice.

Let us make for Dr. M. an hypothetical case: A patient, a friend, perhaps, valued and valuable, after the loss of a superior central incisor on the one side, a lateral on the other, the first bicuspid on both sides, wakes up to the fact that he is losing his teeth, and calls on the Doctor for his advice. An appointment is made, and the patient is promptly on hand. The case is examined, tooth by tooth. The teeth have not been very well cared for; some tartar here and there, a great deal on the lower teeth in the vicinity of the sublingual duct. The teeth are firmly set, gums in, say fair condition, or will be after removing the calcareous deposits; but here are five, ten, yes, fifteen or sixteen cavities of decay, scattered here and there. If the patient is over thirty-five or forty years of age, and the teeth of fair average texture, he will find them hard, the decay in some progressing slowly, in others seemingly almost arrested. The central incisor, whose fellow is gone, has a very large decay on its superior approximal edge, a smaller one on the lateral edge. The lateral, yet standing, is badly decayed, the enamel on the lingual surface on one side is broken down to the depth of the cavity. The canine next has a nice little round hole. Both the anterior approximal surfaces of the second bicuspids have little black spots on them, the decay, if amounting to decay, is scarcely through the enamel. These were affected by the decay which caused the loss of the first bicuspids, which stood beside them, and since, having been kept cleansed, the decay has not progressed. They have been just that way, says our patient, for seven or eight years. Possibly a little cutting down with the

stone will remove this. At most it's only a few minutes' time to fill them. We pass on to the opposite side of this bicuspid, and we find two very large decays. Both molars and bicuspids have large V-shaped portions of the enamel broken, and our instrument passes readily down into large, deep decays. We fear the pulp in one or both is exposed. We go carefully. Neither has ever ached. Little by little we remove the decay, and find in the bottom a leathery substance. It was tooth-bone—*dentos*—once. It makes an excellent capping for exposed pulps—rather better than Hill's Stopping, or chloride of zinc. We will let it alone and see if we can't use it when we come to fill that tooth. We examine the corresponding teeth on the opposite side of the mouth, fearing we may find even a worse state of affairs here; but to our surprise and delight we find only small cavities. Why is this? May be seven or eight years ago, when the lost bicuspid on the opposite side was aching, at intervals, for a year or so, our patient contracted the habit of masticating almost exclusively on this side of the mouth. We ask the patient, and he "guesses" he does. We guess so too, as further examination reveals the fact that the rest of the teeth on this side of the mouth require very little filling; while those on the unused side, both above and below, are decayed at all points most liable to decay. The Doctor has completed his examination, and the patient awaits the opinion. It will possibly be something as follows: "Why, sir, these teeth should be filled. I think there is little doubt that they can be saved for a long time—possibly as long as you may need them. I have found no exposed pulps, and only two, the molar and bicuspid on the right side, where I have any fear of trouble, and as you say these have never ached, I have great hopes we can manage these successfully." "Well, sir, go ahead and fill them." The Doctor is an accomplished operator; and why shouldn't he be—he does nothing but operate? His hands are soft and velvety. His fingers have never been defiled by a vile blow-pipe, or begrimed by a piece of charcoal. We always liked to see a nice *mechanical* operation performed, whether in the mouth or in the laboratory, and we propose to wait and see the Doctor operate. The patient is seated, and the Doctor at once takes hold of the central incisor. The decay is large, as we said, but access to it free, and he has pretty fair sailing. The foreign substance and loose portions of decay are removed, and the

Doctor is about to apply the rubber dam. But hold a moment; at the cervical border the decay has extended to and a little beyond the termination of the enamel, and a little flap of gum is overlapping the cavity. Not being able to use the wedge here to displace it, with a sharp lance he excises it, touches the wounded surface with a little tannin, and at once puts on the rubber dam, turning the edges under with a silk thread. The soft portions of decay are now removed with spoon-shaped excavators. (There's no use of taking a drill for mud.) But now comes into play the engine; with burs good and sharp, the decay is all cut out—no, there is yet in the deepest portion of the cavity, just over the pulp, a layer of discolored bone not yet broken down. I notice the Doctor does not cut this away. He has use for it. He has long since quit hunting for pulps. He gives them as wide a berth as he would another kind of a copperhead. He does well.

The borders of the cavity are now looked after. That little V shaped notch in the enamel, on the lingual surface of the tooth, does not seem to amount to much; but it looks thin, with little underlying bone. The chisel or bur is used. It is very friable and chips away very easily, piece by piece, till finally, a good, firm and smooth border is found, it presents a long curved sweep, from almost the cutting edge of the tooth to the thickened portion near the margin of the gum. The lateral border, I see, requires very little work, dressing with a very fine bur or corundum stone, and polishing with a strip of tape. The cervical border is likewise neatly and smoothly dressed. But the Doctor has not yet formed his cavity for retaining his filling, and anchoring it securely to the tooth. He has, at the base, a large opening with good solid foundation on which to do this. Perhaps the decay has generously made for him some undercuts; but opposite to these it will be necessary to cut a groove or depression, not too deep, for our fine operator has learned that it is worse than useless, it is bad practice to weaken the tooth by drilling three or four large holes for retaining pits in it. So, I see, in one end of the groove which he has cut, he puts one small and rather shallow retaining pit. Now with his groove opposite the overlap, all along the labial border of the cavity, he has little fears of losing his filling if his gold is packed as he knows how to do it. He is going to depend wholly, in this case, upon his anchorages at the base to secure the filling. He does not think much of retaining

pits put in near the cutting edges of the incisors; and in this his head is about level. He has his cavity about ready for the gold; all fine loose particles of bone are blown out with the hot air blow-pipe. But here, in the minds of some, is a question of momentous importance to be settled: What kind of gold is the Doctor going to use? Heavy or light? As an extensive operator, he has tried everything on the scale, from No. 2 up to No. 240, and has finally settled down to 30, 40 and 60, and we say again, his head is all right. We will have no quarrel with any one in reference to the particular numbers of gold he may use; we require only that it shall, in all cases, be cohesive. We know of no case, where it is desirable to fill a tooth with gold, that it cannot be better done with cohesive than non-cohesive.

The Doctor is, piece by piece, malleting the gold in his cavity, and we see he is very careful never to allow the mallet to fall on his plugging instrument when in contact with the tooth, unless there is gold before it. Many otherwise good fillings fail to preserve the teeth, simply because the fine, sharp serrations comminute the border by being driven through the gold, or allowed to come in contact with it and receive a blow from the mallet at some step in the operation. The Doctor has his tooth filled. It is contoured. As a rule, we believe in that; we have a conviction that the All-wise maker of all things knew the best form for a human tooth.

The well packed gold has now to be finished; and we see that rough files or burs are not allowed to come in contact with the tooth substance, but that stones are being used, as well as different grades of corundum tapes. The coarser of these cutting about as rapidly as the file, while they do not endanger the borders. The filling is worked down till fine, clear lines are formed, with no overlapping particles of gold anywhere, and then the smooth, rounded surface is burnished. It is an excellent piece of work and will doubtless preserve the tooth from further decay, at this point at least. We intended to remain and see our operator prepare a cavity and fill something a little more difficult. That large cavity in the anterior approximal surface of the molar, involving the fissures and pits on the grinding surface, as well as the posterior approximal surface of the second bicuspid next to it. These will require more work, and will be a little more difficult to manage. But we are satisfied, from what we have seen, these will be prop-

erly done, as well as all of the twelve or thirteen additional cavities in the mouth of our patient. This case will take three or four or more sittings.

Finally it is completed, and we have some beautiful fillings—gems of burnished gold. The Doctor feels conscious of having done a fine operation, and the patient, while a little wearied and glad it is over, is satisfied. The bill, one hundred dollars, is cheerfully paid, with thanks. Then follows this little colloquy:

Patient—But, Doctor, what about the loss of these teeth? That is really what brought me to you. I have no doubt, as you have said, that the filling of these teeth was of the greatest benefit to me; but I must have some teeth inserted here. I want you to make me a nice set on gold plate.

Doctor—Can't do it, sir! Do you expect me to debase myself by manufacturing artificial dentures? I can't do it, because I never learned the business; and besides, I am opposed to any one else learning it. Why! only a few months ago I offered, in our State Association, a resolution "to dispense with all instruction in the so-called mechanical dentistry in our college."

Patient—But what am I to do? Can't you refer me to some one?

Doctor—Nearly all the men who practice that degrading business now are quacks. There are very few good mechanical dentists, and we don't propose to make any more. There is a fellow around the corner who has a little shop where he makes teeth. I will give you his card. The card is produced and handed the patient. Its exact size is just seven by eleven and a half inches. The head lines, in displayed type, stand thus: "\$10—Ten Dollars for an Upper or Lower Set of Teeth.—\$10."

Patient—Doctor, how many teeth are there in a full set?

Doctor—These fellows, I believe, put only 28 teeth on a plate. I think the third molars are omitted in artificial sets.

A little mental arithmetic takes possession of this man's mind for about seven seconds, which, when stated, would stand thus: Twenty-eight teeth cost ten dollars, how much will four teeth cost? Four in 28 seven times; seven in 10 once, and three; in 30, four, and two; in 20, twice—call it three.

Patient—Doctor, you don't pretend to say I can have these teeth put in for a dollar and forty-three cents, do you?

Doctor—Well no; they say they have to charge something more for partial pieces; he may charge you as high as a dollar a tooth.

Patient—One hundred dollars for filling my teeth, four dollars for replacing the lost ones—one hundred and four dollars.

Right here does not the Doctor feel *debased* by the position in which he has placed himself, his friend, and the dental profession? A foolish notion has entered our head and it finds expression thus: Whereas, the introduction and use of the mallet, the dental engine, rubber dam, and other mechanical appliances, have so simplified the filling of teeth that it is no longer any part of dentistry, but that by bringing the members of our noble profession in contact with filthy, decayed teeth, they are thereby debased. Therefore, it is hereby

Resolved, That the plugging, filling and stuffing of teeth should be no longer any part of the curriculum of our dental colleges.

With this and the resolutions of Dr. M. in full force, we would be far on the road to placing the dental profession on the high plane of pure dental science. No! Mr. Editor, as you aptly put it in a recent number of the JOURNAL, there are too many unfortunates wearing somebody else's teeth, just now, for the dental profession to ignore mechanical dentistry. When Doctor M. has securely locked the doors of the mechanical department of our colleges, we ask him to keep right along and bolt and bar the operating department too. That he will succeed in doing the one about as soon as the other, is the opinion of F. M.

GENEVA, SWITZERLAND, Aug. 16, 1881.

Editor of the Ohio State Journal of Dental Science.

MY DEAR SIR:—Having just returned from attending the International Medical Congress, at London, and the American Dental Society of Europe, at Wiesbaden, I will give you a brief account of what I saw and heard. The Medical Congress was formally opened by the Prince of Wales, and the opening address was delivered by Sir James Paget. It is estimated that there were at least four thousand present from all branches of the healing art. It shows that the world moves, when such a body of intelligent and scientific men can meet together in one vast body,

to consider the great questions of the day in medical science, and to devise means for the most speedy method of relieving the ills that flesh is heir to.

The Congress was divided into sections, each representing a special branch of medicine. For the first time in the history of our profession, our specialty was assigned a section. We have well earned such a distinction, and should have had it long ago. I believe it is a well recognized fact that no other branch of the healing art has made more, or as rapid progress as our own; and I feel quite sure that recognition will make us still more diligent and anxious to go on to perfection. The dental section met each day from ten to one o'clock, in the Burlington House, under the presidency of Mr. Saunders, dentist to the Queen, and the secretaryship of Mr. Tomes, Jr.

Papers were read, and the discussions were lively and interesting, on the leading subjects of interest to the profession. One could imagine himself at one of our meetings at home, in seeing present the once familiar faces of Drs. Taft, Atkinson, McKellops, Dean, Kingsly, Shepard, Watling, Barrett, of Buffalo, Field, of Detroit, and others. Many good papers were read by the English, German, French and Americans. It was a novel sight to hear the leading topics treated so ably, first in one language and then in another. All seemed to be striving for the one great object, i. e., the lessening of human suffering.

A clinic was held each day, at the London Dental Hospital, where ample provision had been made for demonstrations of every class of operations in dentistry. There seemed to be no lack of operators, all anxious to show the best way to do it. There were also exhibited all the newest inventions in the way of dental appliances, both from Europe and America. The brethren in London seemed to vie with each other in entertaining the visitors with invitations to luncheons, dinners and garden parties. In fact, the city officials, together with the medical and dental profession, did everything possible to make the visitors comfortable and happy.

We extended a cordial invitation to the distinguished American dentists, and others present, to go to Wiesbaden. Drs. Taft, Watling, McKellops, Field, of Detroit, Shepard, of Boston, Dudley, of Salem, Moore, of South Carolina, Barrett, of Buffalo, McManus, of Hartford, and Fredericks, of New Orleans, kindly accepted,

and were present and took part in our proceedings, which made the session unusually interesting.

We closed the proceedings with a grand banquet. Toasts were drank to our absent friends, and among that number you were not forgotten.

N. W. WILLIAMS.

1028 VERMONT AVE., WASHINGTON, D. C., Aug. 29, 1881.

Editor of the Ohio State Journal of Dental Science.

MY DEAR DOCTOR:—Permit me to put on record, through your valuable journal, a discovery made in 1875, by which lead can be located in a living human subject by means of electricity. I quote from my article of that date, forwarded to Dr. J. W. White, editor of the *Dental Cosmos*, of Philadelphia, the receipt of which he acknowledges under date of June 14, 1875, which letter of acknowledgement now lies before me; also the letter of acknowledgement of Dr. J. B. Hunter, of the New York *Medical Journal*, dated June 12, 1875, acknowledging the receipt of my article, also lies before me:

“I have discovered by a series of experiments with the electro magnetic battery, that a current of electricity thrown through the living human body, gives rise to great uneasiness when passing through lead; amounting to absolute pain if the power is increased and the current through the lead continued any length of time.

“Having in my profession but limited means of verifying or extending the experiments upon this most important subject, it must be left for extension in the hands of the surgeon, who so frequently probes in vain for the leaden messenger of death—to the surgeon, whose field of observation is so much more extensive, and who has the material for experiment so much more abundant.”

The above extracts from my articles, with the date, and the date of the editors' replies, are evidence of the time of the discovery, and its presentation to medicine and surgery.

My first experiments were upon my own person, having had the misfortune to receive a full charge of shot from a friend's gun whilst woodcock shooting. Each pole of the battery should have a wet sponge attached. Placing one pole at the base of the brain or base of the spinal column, a distinct feeling of uneasiness is experienced when the other pole is placed so as to pass the mag-

netic current of electricity through the lead ; and this uneasiness is quickly rendered decidedly painful if the current is continued long and increased in power ; although that increased power will give no uneasiness when applied on other parts of the body.

My second series of experiments were made upon an old soldier, kindly sent to me by Dr. Norris, U. S. A. This ball was lodged four or five inches from the spinal column, and a little below the fifth rib, as near as I can remember, and could be felt with the hand. Mr. McGill says, "The feeling was of a stinging character," and when a stronger current was passed through the lead, "Caused me to jump in my chair."

My third experiment was with Col. Morrow, U. S. A., of General Sherman's staff. Dr. Basil Norris, surgeon U. S. A., says of the ball in Col. Morrow's case: "The point of entrance of the ball was near the groin ; the current located it on the inner aspect of the thigh near the knee." Col. Morrow says, "I am satisfied your location is a correct one."

My fourth experiment was on John Tehan, at the Soldiers' Home, by courtesy of Dr. Huntington, U. S. A., in charge. The ball in this case, says Dr. Norris, "entered about the center of the right gluteal region ; the current located the ball near the hip joint. Mr. Tehan says, you found the most painful point in your experiment on him."

In the second and fourth, or last case, the current was longer continued, and the power of the battery increased, so as to prove beyond a doubt the presence of the lead ; the patients being strong men. Dr. Norris says: "Your experiments with the electromagnetic current, to find a bullet lodged in the living body, as witnessed by me, were successful in defining a painful or burning sensation, supposed to be produced by the presence of the ball."

Dr. D. L. Huntington, surgeon U. S. A., and acting surgeon in charge of the Soldiers' Home, through whose courtesy I performed the experiment at the Soldiers' Home hospital, in presence of himself and Dr. Norris, says: "I have no hesitation in saying that I think your experiments, on August 7, on the person Tehan, an inmate of the Home, demonstrated the presence of a metallic body at or above the region between the greater trochanter of the right femur, and the tuberosity of the ischium."

The presence of this body was repeatedly evidenced by a

sharp pricking pain, with some shock when the magnetic current was made to traverse the region; similar effects were not produced under similar manipulations on other regions. In all these experiments the lead was encysted, the wounds having occurred more than twenty years previous to this date.

In recent wounds I have no doubt the most gentle current would indicate the presence of lead; and with a little care, the location could, in most cases, be reduced to the diameter of one inch, which would be sufficiently accurate for the surgeon's purpose.

The location of the lead having been in a manner accomplished by the method indicated, the two poles of the battery should be brought as near as possible to this point, and the current made to pass directly through the metal.

H. NICHOLS WADSWORTH, D. D. S.

Editor's Specials.

"Wisdom is better than weapons of war."—SOLOMON.

"ORAL CHEMISTRY."

WHILE still busy in the practice of medicine, and before a thought of turning our attention to dental surgery had taken shape, we subscribed for one dental journal, and exchanged a medical journal with a neighboring dentist for another, and all this the better to qualify for general practice. From these, the *Register* and the *American Journal*, we caught the idea of the chemical character of dental caries.

When we came into special practice, we asked our new brethren what agents are the immediate causes of the several varieties of dental decay, and the answer was ACIDS. But what acids? Father Harris, Westcott, etc., answered, "nearly all acids corrode the teeth, and may thus cause decay." Why, then, have we so few varieties of dental caries? was the next question; for chemical action is definite in its nature. If many reagents act, there must be as many reactions. We got no further in the pursuit of knowledge, in this direction, by this process; and we

had to begin a series of original researches and investigations; and we can truly say that, with but little help, we became satisfied that we could satisfactorily explain the nature of the three recognized varieties of dental caries. In 1856 or 1857 we set forth the result of our researches in the *Dental Register*, of which we were then one of the editors. We have been surprised that after the lapse of a quarter of a century so few recognize the soundness of our views. A majority still write and talk as indefinitely at the present day on this subject as if it had never been clearly set before them. The *Register* articles were republished in *Watt's Chemical Essays*; but, from the nature of the work, this had not a very wide circulation. More recently, extracts from the articles were published as an appendix to *Taft's Operative Dentistry*. Since that they have attracted more attention, and are more generally recognized. These extracts say nothing of the exciting causes of "chemical abrasion." That form of decay was investigated at a later date, and is as clearly set forth as the others, as is also the immediate cause of the deposit of salivary calculus.

In the present number of the JOURNAL we have a contribution on "Oral Chemistry," read at a late meeting of the Wisconsin State Dental Society. This article, in the main, is sound; and it is refreshing to see that, instead of the indefinite utterances we are used to, here we find mainly clear thought. A few slips occur, as, for example, that the oxygen is or must be nascent in order to form nitric acid by the oxidation of ammonia. Then, that the phenomena of the most common variety of caries can be produced by the alternate action of nitric and sulphuric acids, is simply absurd, and we thus early call the attention to it that the antidote may have an even start with the bane. This article, like the appendix in *Taft's Operative Dentistry*, omits "chemical abrasion," and what is curious and interesting, is that the three varieties of caries are explained exactly as explained by us a quarter of a century ago. They are assigned to the same acids, and the origin and formation of these acids are explained in exact accordance with our views as given so long ago. The acids, and the resultant varieties of caries, are not mentioned in the same order, and the new nomenclature and notation are used in this article, while, at that date, of course, we used the old.

This whole article reads as if it were the result of original

research and experiment; and this is strong circumstantial evidence of the soundness of the views so long ago given by us. For if, with the additional light afforded by a quarter of a century of rapid professional progress, the same conclusions are reached by original investigation, the principles set forth can scarcely be otherwise than correct. Of course, it is possible the writer may have seen an old volume of the *Register* containing our articles, may have a copy of *Watt's Chemical Essays*, or if not, a late edition of *Taft's Operative Dentistry*; yet we cannot believe that, had he seen our views as therein set forth, he would have given expression to precisely the same chemical thoughts without some allusion to ours. Consequently, we claim increased confidence in these views from the profession, from the fact that they have been again worked out by original research.

VAN ANTWERP'S PULP DIGESTER.

At the last meeting of the Mississippi Valley Association, Prof. Van Antwerp spoke of the power of the active principle of the rind of the common papaw, to digest dead organic matter, while living tissue was able to resist its action. We wrote to him for particulars; and we make free with his reply. He regards the matter as not yet ripe for publication; we propose, thus, to hasten its ripening. He writes us as follows:

"You wrote me in reference to the vegetable digestive medium. I cannot give you what I wish, as I lack data. Residing a half mile from the central part of our town, I was carrying homeward, in my hand, a beef-steak, which broke through a thin paper investing it. I stepped outside of the pathway, and plucked some leaves of the *assimina trilobis*, or common papaw, and used them as wrapping. The steak was left all night in contact with the leaves, and in the morning Mrs. V. called my attention to the digested condition of its surface, an appearance I recognized at once, having made many experiments with the gastric juice of a dog that I had with an artificial fistula in his stomach. I was thus led to further experiments with the papaw, and found that the juice of the rind of the fruit would digest dead flesh quite rapidly. I then tried an excellent, new pulp case, where the pulp could be laid bare, and covered, without

pain or inflammation. In an inferior molar I found the pulp exposed and suppurated, yet excessively lively just below the surface. I thought of the papaw juice, and put one drop of it on the pulp, and covered with gummed cotton. The patient suffered a little, but in three hours returned, when I cleansed the cavity with tepid water, and found a beautiful pink-colored surface, neither angry nor congested. So, I dressed it with glycerine, aconite, and water, equal parts, and covered again with gummed cotton. Next day it looked finely, and I flowed oxy-phosphate of zinc over the exposed pulp, filling the whole unoccupied portion of the pulp-chamber, as the pulp had receded, from loss of substance. I let this harden, and then covered with tinfoil.

"This is the operation; now for the result: Last week my patient came in, and I examined the tooth, tested with ice, and found that the pulp was still alive. He told me he had experienced no pain whatever, and prized the tooth very highly. This is my only experiment *in the mouth*; and I have felt that the data would not yet justify publication; and then, I can not write. [But he can, though.—ED.]

"I shall try to gain more items the present season, and to find a method of preserving the active principle of the papaw, that we may have it out of season as well as in."

Such is the modest statement of Dr. V., and it is well worthy of the closest attention. We hope others will aid in the investigation,—never failing to give him full credit for the original discovery. He is a man whose eyes are open. Some of us would have worried over our lost steak, without a thought of adding to the therapeutic power of our profession.

It is possible, and we think probable, that a fluid extract of the papaw rind, or leaves, may be prepared that will retain the desired active principle. If not convenient for yourself, get your druggist to prepare a fluid extract, by a formula similar to that for preparing fluid extract of senna, try it, and report, and the JOURNAL is at your service.

From the results of Dr. V.'s experiments, we infer that the medicine is worthy of attention from the general surgeon, as an application to fetid or gangrenous sores. The first step toward improvement is often getting rid of septic matter on the surface of such sores. The slight pain felt when it was applied to a tissue so sensitive as the dental pulp is an indication that no pain

whatever would be experienced when applied to ordinary tissue. We hope it will be given a fair trial by both physicians and dentists.

THE DENTAL JAIRUS—ITS DEEDS AND ITS DOINGS.

THIS interesting exchange is *The Pacific Coast Dental Jaiurus*. It has removed from the home of its childhood to "Oakland," and has taken its editor and publisher and his dental depot along. Owing to the illness of the publisher in June, we have the July and August numbers in one.

No dental journal ever before had such an array of editorial talent. It has *one* editor, and *eight* more, having two or three titles apiece, and they are all men of well recognized talent. The very thought of so much force on so small a periodical starts a headache. What can they all do? This double issue doesn't show, of course. They have not yet got warm in their harness, hence we have less than a page apiece of editorial work to the number. But look out! For, "that the Pacific coast will soon possess the best dental journal the world ever saw, can be easily determined without much stretch of the imagination." That is said by one—possibly by all nine of the editors; and we are glad to hear it. We are waiting and watching, with new spectacles and a spy-glass, hoping to be the first to see the new and desirable possession. Make it good, gentlemen—just so it is not too good to exchange for the JOURNAL. But further, it is editorially said by the one, or nine, as the case may be, that "It is utterly impossible for any *one* editor to make a journal as acceptable as a half dozen can." And of course *nine* can make it still fifty *per cent.* better than the *half dozen* can.

But after all, a complex team must pull together, if great strength is to be displayed. The nine (magic number, as the nine muses, you know) may not act in harmony; but they are such good fellows we cordially expect they will. But may not each one depend on his comrades? He may not feel the inspiration of great thoughts, but what of that? His eight comrades will rush to the rescue. But if they don't? And then, a good professional brother is wrestling with a big bouncing thought that he wishes to lay before his brethren. He would send his paper to the *Jaiurus*, but he

thinks of its nine editors and the size of the *Jairus*, and concludes there will not be room for him, after each editor has had his say, and so he sends it to the JOURNAL. Orator Puff had two tones in his voice. He fell into a pit. He called lustily, "HELP ME OUT! help me out!" in his coarse and fine notes, and

"As Paddy was passing, he cried 'What a bother;
With two of you there, you can help one another.'"

We hope sincerely that professional writers will not leave *the nine* to "help one another;" but even if they do, the *Jairus* ("Pacific Coast," as aforesaid) need not suffer. We feel that if multiplied by nine we could run a small periodical. But success to the *Jairus*; success to the nine! We are their friend, and in some cases their "father's friend."

HONORED IN HONORING.

At the close of its late collegiate year the University of Michigan, among the other good things it did, conferred the degree of M. D. on Prof. J. Taft. It is a credit to any medical school to have so good a man among its *alumni*. The big university has thus conferred honor upon itself. It could well afford to give an M. D. for a J. T.; and we can recall nothing of the kind so very appropriate. We hope J. T. will tell us just how a man feels when treated that way. All our degrees have been obtained in the regular way, and now we're too old and stupid to do or say anything smart enough to obtain one by inoculation, hence, unless told, we can never know how happy a man feels to have titles put on him in that way. J. Taft, M. D., D. D. S., A. M., mind you!

[This was written for August, but dropped out.]

UNIVERSITY OF MICHIGAN—ADDITIONAL GRADUATES.

At the June commencement of this institution seven young men received the degree of D. D. S., in addition to those who graduated in March. These had remained to take a course in Applied Chemistry. Some one of their number, or one of the professors, should have given us a notice of this in time for our

August number. As they did not, they will not complain of our tardy notice. We are not omnipresent, by considerable, nor do we learn facts by intuition; therefore we are always thankful for interesting professional news items, and we hope the next June class will not forget the JOURNAL.

VARIED OBSERVATIONS.

At the late meeting of the National Dental Association, as reported in the *Dental Cosmos*,

“Dr. Rhein had noticed when at college that the dental students were devoted to the practical part of dentistry. They kept away from the medical lectures, and from the chemical laboratory. This was why he advanced the view that students of dentistry should take up medicine first.”

Our own observation “when at college,” was quite different. We were at one college nearly every term from 1853 to 1871, and in all these years the students were more anxious to hear the lectures on general pathology than the others; and anatomy and chemistry were as zealously studied as were operative and mechanical dentistry. We are sure that Western students are willing to give close attention to medical studies, and we presume those of the Eastern States have similar tastes.

In the college we refer to, anatomy, pathology, physiology, and chemistry, were as thoroughly taught as in the medical colleges of the same city. If these sciences are carelessly taught, of course the students will slight them. Let the teachers show, by their manners, that they regard them as of primary importance, and they will be duly respected by the class. Such has been our experience, with good opportunities for observation. We think the facts noticed by Dr. R. can be otherwise explained — that it is not necessary to infer that students dislike medical studies.

THANKS to our good brother, of Paxton, Illinois, for the volume of Transactions.

A DIVINITY THAT SHAPES OUR ENDS.

IN our early professional career the family of an acquaintance was greatly afflicted by a variety of diseases. To cap the climax, his barn was burned by lightning, his crops, carriages, cattle and horses being lost in the conflagration. A sympathizing neighbor remarked to him that Providence was dealing severely with him, to which he replied, "Ah, yes! it just fulfills the Scripture, that says 'there's a Divinity that shapes our ends rough!'"

A Divinity has shaped our ends about in this way: At the last meeting of the Michigan State Society our friend, Dr. Metcalf, proposed to have the chair of Mechanical Dentistry in the college abandoned. Dr. Rehwinkel noticed this, and criticised Dr. M. in the April JOURNAL. Dr. M. replied, his paper arriving just too late for the June number. Dr. R., in his paper, took the ground that there was little or no hope of recognition from the medical profession. Dr. M.'s paper assents, but claims that this is on account of our adhering to mechanical dentistry. Now, even had we got Dr. M.'s paper in June, it would have been only simultaneous with the announcement that the American Medical Association had already recognized us, horns and all, or rather with all our mechanical appliances, just as surgery, with its splints, pulleys and bandages, has been recognized for years. And, besides, the International Medical Congress has its section on dentistry, in all that the word implies. And all these things considered, an article in our August number advocating divorce because the medical profession will not recognize us on account of our mechanism, seems a little untimely; yet we had nothing to do with such a combination of circumstances; but a Divinity has shaped our ends. We verily believe both our correspondents will rejoice in the recognition, and that the resolutions now lying on the table will rest in peace, and that all will feel that what God has joined (in his providential management) man should not put asunder.

Such a recognition involves us in new responsibilities. Our Cheap Johns, and our amalgam and rubber quacks, are to be assigned to the sphere of the "Aged minister, whose sands, etc.;" or the "genuine old Dr. Jacob Townsend." Nor will such assignment interfere with the legitimate use of cheap materials, either in operative or mechanical dentistry.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. I.

DECEMBER 1, 1881.

No. 6.

Contributions.

“Withholding facts is robbery.”—ORVILLE DEWEY.

FRACTURES OF THE INFERIOR MAXILLA.

BY DR. THOMAS L. GILMER, QUINCY, ILL.

Illustrated by Dr. G. V. Black. Jacksonville, Ill.

[Read before the Illinois State Dental Society, held at Rock Island, May 10, 1881.]

IN attempting to collect the material for a paper upon the treatment of fractures of the inferior maxilla, I found that part of our text books relating to this subject very incomplete. I also discovered that there was but little of a practical nature to be gleaned from works on surgery.

It appears to me that we are not so well informed as a profession, upon this particular branch of our calling, as upon others which daily demand our attention. This may be owing to the infrequency with which the majority of operators meet with such cases; but it is a very important branch of dentistry, and should engage the attention of every one in the practice. We are liable to be called upon at any time for the treatment of fractures of the maxillary bones, either in co-operation with the surgeon or alone.

It is conceded by the general surgeon that fractures of the lower jaw are among the most troublesome to treat, and that without

the aid of a skillful dentist the result is rarely what it should be. Fractures of the inferior maxilla are especially difficult of treatment: first, because of the inability to splint them in the same manner as other bones; second, because of the numerous muscular attachments, most of which, besides giving mobility to the jaw,

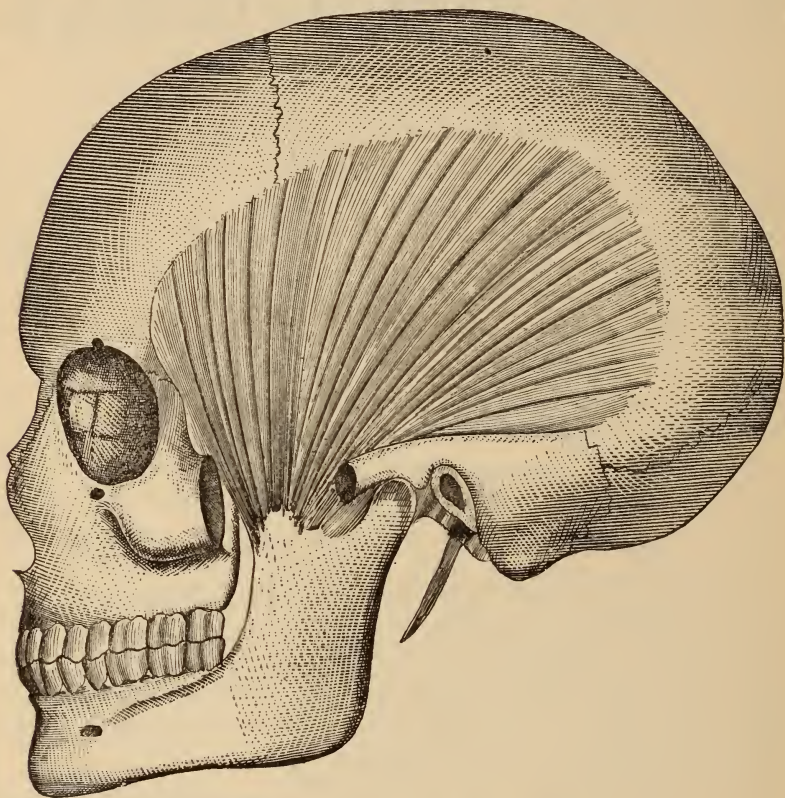


FIG. 1—TEMPORAL MUSCLE.

perform various other offices, thus giving rise to difficulties in treatment. In the treatment of a fracture of one of the lower limbs, the muscles upon which the limb depends for action are the only ones with the contractility of which the operator has to contend. This is not the case in fractures of the lower jaw. Besides the muscles which govern the movements of this particular member, we have the muscles which govern the tongue, the larynx, the pharynx

and the neck, all tending to displace the fragments, as they perform their respective functions. It is therefore necessary to take into consideration the action of these various muscles, when making an appliance for the purpose of holding the parts in their normal position and at rest, while nature unites the fragments. This being the case, a knowledge of the muscles of the jaw and its surroundings is essentially necessary to successful treatment.

ETIOLOGY.

In time of peace these fractures are mainly caused by kicks from animals, falls from heights upon the chin, and blows from

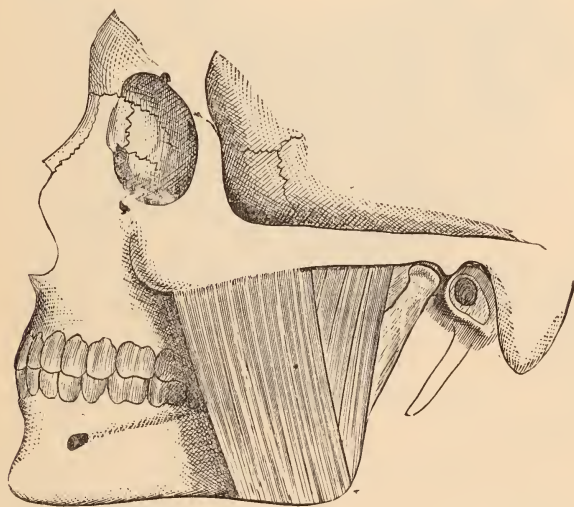


FIG. 2—MASSETER MUSCLE.

individuals. In time of war, gunshot wounds are a more common cause. As a rule these are said to be more difficult of treatment than those from other causes, from the fact of their being compound, and frequently comminuted, often with much loss of bone and laceration of soft tissues.

DIVISION.

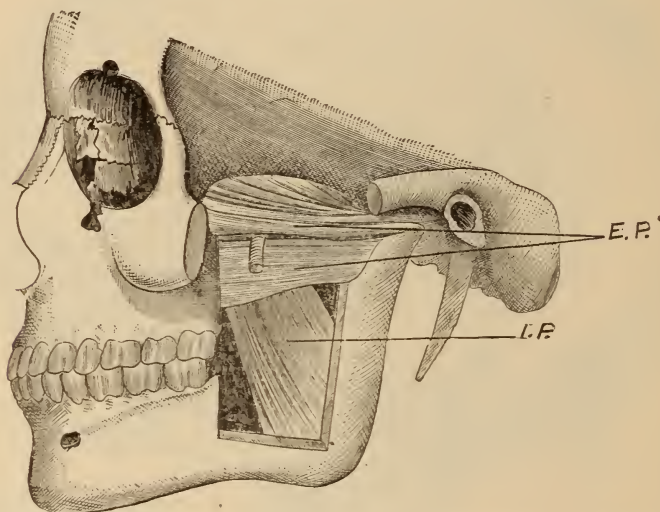
Fractures of the inferior maxilla may occur at any point between the condyles, including the coronoid process in its protected position, but are more commonly met with between the symphysis and angle.

As a rule dentists are employed only to treat cases which require an apparatus inside the mouth to hold the parts in position. When the break is at the angle or in the ramus it is more commonly attended by the surgeon alone.

SYMPTOMS.

As in similar injuries of other bones of the body, fractures of this bone are indicated by mobility, crepitus, and displacement. In

FIG. 3.



E P—External Pterygoid Muscle.

I P—Internal Pterygoid Muscle.

addition to these symptoms, one tooth, or more, if present, may be loosened on the line of break. If the fracture be posterior to the median line, and anterior to the attachment of the masseter muscle, the obliquity being favorable, displacement is easily discernible. There is also more or less pain, and in some cases a considerable increase in the flow from the salivary glands.

DISPLACEMENT.

Displacement is produced primarily by the force which caused the accident; secondarily, (and generally much more decidedly), by muscular contraction. Muscular contraction is usually very pronounced, yet there are cases in which this influence is not felt. If the fracture be at the median line there will be little or no displacement consequent thereupon, as the muscles of the one side have no

advantage over those of the other; but if it be posterior to this point it becomes greater until the attachment of the masseter muscle is reached, when displacement from muscular contraction decreases. The muscles which are the most active in causing displacement are the masseter, the internal-ptyergoid, the mylohyoid, the genio-hyoid, and the genio-hyoglossus. (Figs. 2, 4, 8, 9, 10.)

If we have a single fracture at or near the cuspid tooth, the masseter (being stronger than all the others which it opposes

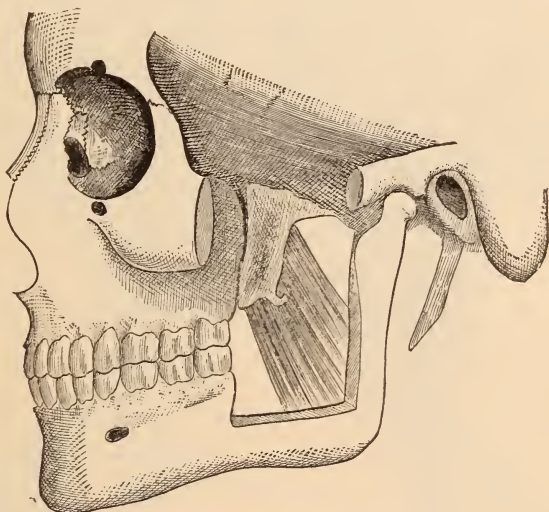


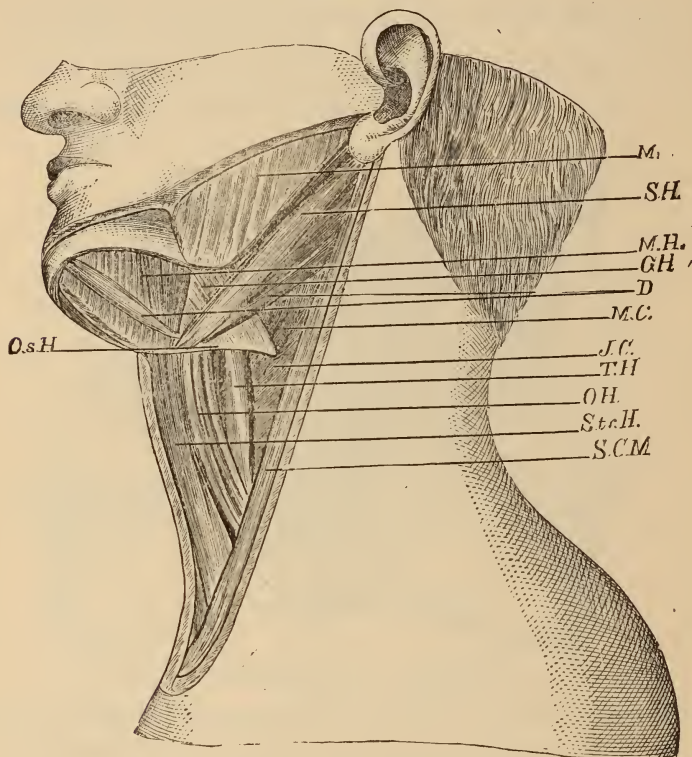
FIG. 4—INTERNAL PTERYGOID MUSCLE.

combined), by contraction will elevate the posterior fragment, and rotate its base outward, while the mylo-hyoid, assisted by the internal pterygoid, will draw the same fragment into or toward the center of the mouth (Figs. 2, 4, 8); at the same time the mylohyoid, the genio-hyoid and the genio-hyoglossus, aided by the internal-ptyergoid of the opposite side from the fracture, will pull the longer fragment toward the fractured side, thereby increasing the displacement. (Figs. 8, 9, 10.)

Any decided movement of the head, either rotary or otherwise, will have a tendency to displace the fragments. The simple acts of deglutition and speaking also tend to do the same. In fact all the muscles, either directly or indirectly attached to the hyoid bone, will aid displacement. (Figs. 5, 6, 7, 10.) There are eleven pairs of muscles attached to this bone, four pairs of which

are directly attached to the lower jaw, viz: the digastric (by its pulley), the mylo-hyoid, the genio-hyoid and the genio-hyoglossus. Two other pairs of the eleven (the lingualis and the hyoglossus), are directly attached to the tongue, and must be taken into

FIG 5.



MUSCLES DEPRESSING THE LOWER JAW.

M—Masseter.
S H—Stylo-hyoid.
M H—Mylo-hyoid.
H G—Hyo glossus.
D—Digastric.
M C—Middle Constrictor.

I C—Inferior Constrictor.
T H—Thyro-hyoid.
O H—Omo-hyoid.
Str. H—Sterno hyoid.
S C M—Sterno-cleido mastoid.
Os₂ H—Os Hyoides.

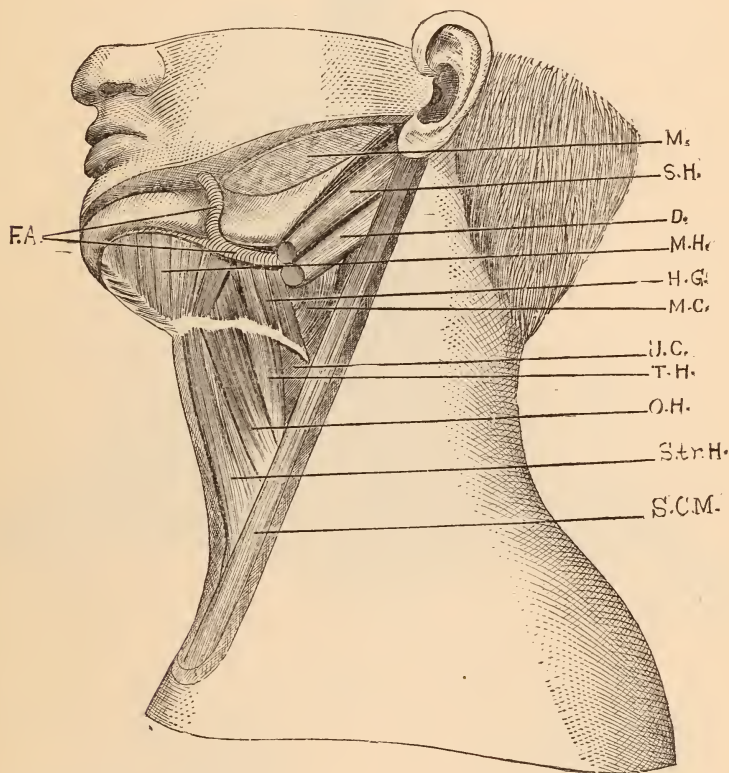
consideration, as, in performing their work they will aid in displacement.

In the act of swallowing, the larynx is elevated by the contraction of the hyoid muscles which are attached to the styloid process lower jaw and tongue. Before this contraction can take place the lower jaw must be fixed to the upper by the muscles which close the mouth, when the act may be accomplished.

To convince yourself that it is not an easy matter to swallow when the mouth is wide open, and the muscles consequently powerless, please try the experiment.

The necessary contraction of those muscles, in the act of swallowing, must (if the fragments are not restrained, either

FIG. 6.



MUSCLES DEPRESSING THE LOWER JAW. DIGASTRIC AND
STYLO-HYOID MUSCLES CUT AWAY.

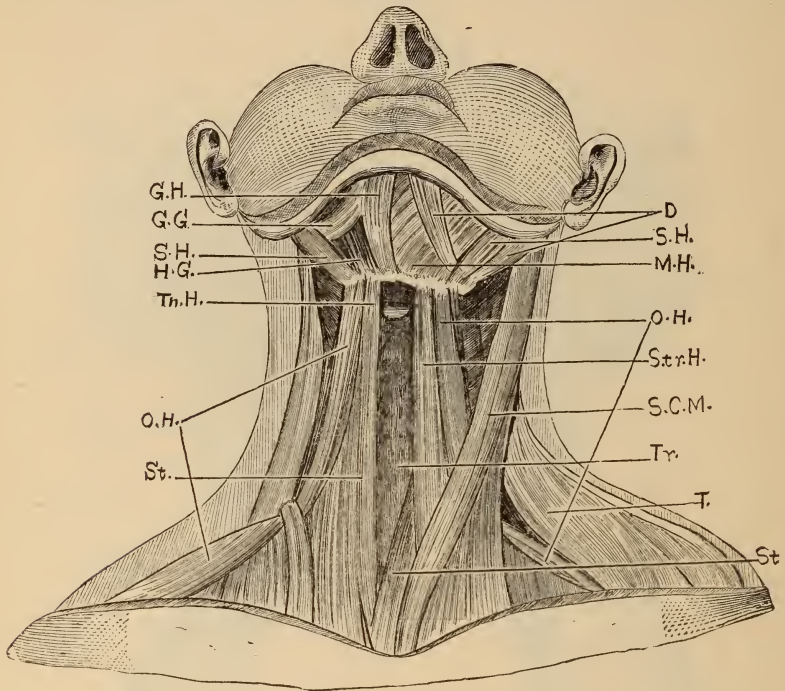
M—Masseter Muscle.
S H—Stylo-hyoid.
F A—Facial Artery.
D—Digastric Muscle.
M H—Mylo-hyoid.
H G—Hyo-glossus.

M C—Middle Constrictor.
I C—Inferior Constrictor.
T H—Thyro-hyoid.
O H—Omo-hyoid.
Str. H—Sterno-hyoid.
S C M—Sterno-cleido mastoid.

by some mechanical apparatus or by the nature of the fracture), cause more or less displacement. If the head be thrown back, the same muscles being put on tension, will have the same tendency; if turned to the right or the left, the digastric muscle, aided by the

other muscles of the jaw, will produce a similar result. Not only the muscles directly attached to the jaw and tongue play a part in displacement, but all those with which they are related have a like tendency.

FIG. 7.



MUSCLES OF THE THROAT AND NECK.

G H—Genio-hyoid.
G G—Genio-glossus.
S H—Stylo-hyoid.
H G—Hyo-glossus.
Th. H—Thyro-hyoid.
O. H—Omo-hyoid.

St.—Sterno-thyroid.
D—Digastric.
M H—Mylo-hyoid.
Str. H—Sterno-hyoid.
S C M—Sterno cleido mastoid.
Tr.—Trachea.

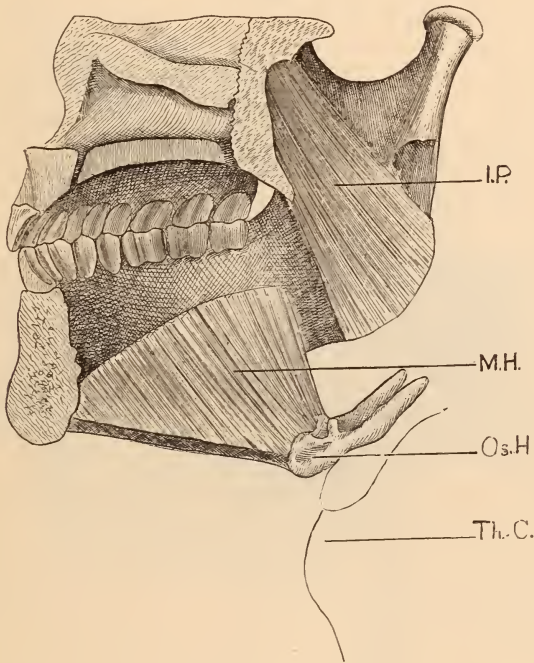
T—Trapezius Muscle.

If the fracture be double, both breaks being near the cuspid teeth (one on each side), (Fig. 13) the displacement will be very decided, by the contraction of the genio-hyoid and the genio-hyo-glossus muscles, provided the line of break be favorable, (Figs. 7, 10.) These muscles have their attachment, as their names suggest, at the chin and hyoid bone, and would depress the anterior fragment and cant it outward, while the posterior fragments would be rotated outward at their base and elevated by the masseter,

(Fig. 2), and drawn in by the mylo-hyoid and the internal pterygoid (Fig. 8), making the displacement very great.

If the fracture be at a point midway between the anterior and posterior attachment of the masseter muscle, the displacement, if not complicated, is not commonly very great. If the fracture be at the angle, displacement is not very considerable. (Fig. 14.) The at-

FIG 8.



HALF OF UPPER AND LOWER JAWS SEEN FROM THE INSIDE.

I P—Internal Pterygoid Muscle.
M H—Mylo-hyoid Muscle.

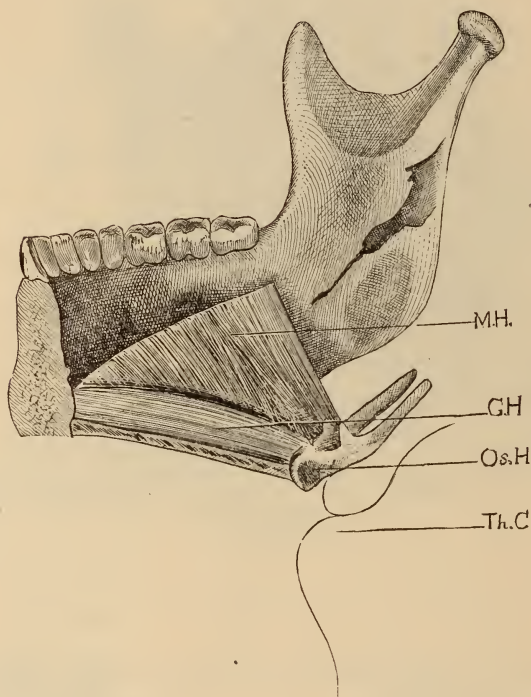
Os. H—Hyoid Bone.
Th. C—Thyroid Cartilage.

tachment of the masseter, extending to the angle, pulling directly up, and the external pterygoid, having its attachment posteriorly at the condyle, and anteriorly by one head, at the great ala of the sphenoid and the pterygoid ridge, the other at the external pterygoid plate, the tuberosity of the palate bone and the tuberosity of the superior maxillary, making its pull directly forward, tend to hold the fragments together. (Fig. 3.) Were these all the muscles attached to this portion of the jaw, displacement would not be

serious; but unfortunately for such cases the temporal, having its lower attachment to the coronoid process, by its posterior fibers, will tend strongly to draw the fragments apart, thus forming a V shaped opening. (Fig. 1.)

If the break be at the condyle, the external pterygoid will pull the short fragment forward, and the masseter, aided by the

FIG. 9.



LOWER JAW FROM INSIDE.

M H—Mylo-hyoid Muscle.
G H—Genio-hyoid Muscle.

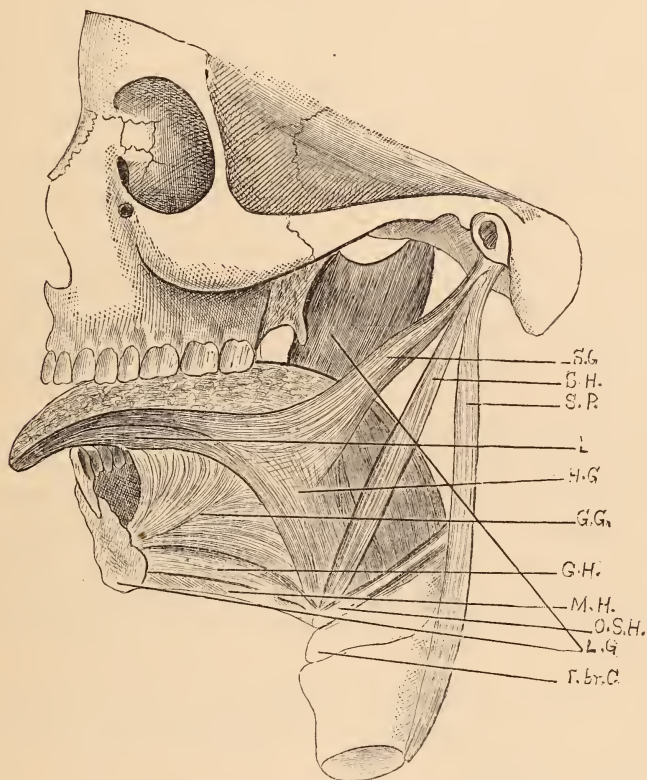
Os. H—Hyoid Bone.
Th. C—Thyroid Cartilage.

temporal and the internal pterygoid, may, under some circumstances, cause the fragments to lap each other.

The line of fracture has a great deal to do with displacement in counteracting muscular contraction by the obliquity of the break. Should the fracture be double, as before described, the

obliquity on each side being the same, that is: the line of break extending from below upward and backward, the contraction of the muscles would have but little effect, since the anterior fragment would be firmly held in place by its extremities resting upon the ends of the two posterior fragments. Its upper surface may

FIG. 10.



THE TONGUE AND ASSOCIATE MUSCLES.

S G—Stylo-glossus.
S H—Sterno-hyoid.
S P—Stylo-pharyngeus,
L—Lingualis.
H G—Hyo-glossus.

G G—Genio-hyglossus.
G H—Genio-hyoid.
M H—Mylo-hyoid.
Os H—Os Hyoides.
L J—Lower Jaw.

Th. C—Thyroid Cartilage.

be rotated outward by the contraction of the genio-hyoid and the genio-hyglossus muscles, their attachment being nearer the base of the jaw than to its upper surface; but this displacement, if present,

would probably be all there is from muscular action. But if the obliquity be the opposite from this, the anterior fragment would be displaced downward as in a similar fracture previously described.

If the obliquity on the left side be from below, upward and backward, while on the right side from below, upward and forward, the right end of the anterior fragment would be depressed by the muscles before referred to. The opposite side would not be displaced downward, from the fact of its end resting upon the oblique surface of the posterior fragment. This is equally true if the fracture be single and at the cuspid tooth, the obliquity extending from the outside of the bone forward to the lingual side. In such a case the mylo-hyoid and the internal pterygoid would have full sway, and the displacement would be the same as before described, in the action of the muscles in a single fracture at this point. But if the obliquity be reversed, there would be no displacement inward by the mylo-hyoid, owing to the unfavorable angle of the obliquity for displacement. There would simply be an elevation, of the posterior fragment, and an outward rotation of its base by the masseter.

If this obliquity be found, it is safe to conclude that the blow which caused the fracture exerted its force anterior to the break; and it occasionally occurs that the blow is of such a nature as to drive the anterior fragment inward and backward, sufficiently to lodge it behind the posterior fragment, where it may be firmly held by the action of the mylo-hyoid, the genio-hyoid and the genio-hyoglossus muscles. A considerable force is often necessary to dislodge it.

So it will be seen that the obliquity may counteract muscular contraction, and very materially modify displacement consequent upon muscular action.

It has been said by some that the force or blow which causes the fracture has as much to do with displacement as muscular contraction, if not more. It is not easily understood how force alone can influence displacement, except by the overlapping and lodging of the anterior fragment behind the posterior, or by causing such an obliquity as to render it impossible for the muscles to exert their influence.

(To be Continued.)

DEVELOPMENT OF THE ENAMEL.

BY DR. M. S. DEAN, OF CHICAGO.

While the epithelial nature of the enamel has become a settled question, the *mode* of its production is still a matter of controversy. Indeed, physiologists are pretty evenly divided as to whether the enamel-cells are actually *converted* into enamel-prisms, or whether the enamel is the *product* of these cells.

On the one hand we have Schwann, Tomes, Waldeyer, Frey, and others, who hold that the enamel is formed by an actual conversion of the enamel-cells (Tomes)—or, in other words—that the enamel may be regarded as the *petrified* dental epithelium (Waldeyer.)

On the other hand we have Huxly, Lent, Kölliker, Magitot, Kollmann, and many others, who believe the enamel to be the product of a secretion or an *exudation* of the enamel-cells.

Although the advocates of the latter theory do not perfectly agree as to the manner in which this *exudation* or *secretion* takes place, yet in this there seems to be no very *essential* difference.

Huxly claims the existence of a preformative membrane, which clothes the free surface of the internal epithelium. This, according to his theory, lies between the enamel-organ and the dentine-germ *until* the formation of the enamel commences; but afterwards *between* the enamel-cells and the forming enamel, so that in any stage of development this membrane may be raised from the external surface of the new enamel; and finally, after the enamel is completed, this membrane becomes the *cuticula dentis*, or Nasmyth's membrane.

Histologically, it seems to me that Dr. Magitot's description may be made to harmonize perfectly with the above; though he believes the *continuity* of this membrane is effected by artificial means.

He asserts that the basal extremity of the enamel-cells, *i. e.*, the ends that are presented to the dentine-germ, are closed by individual membranous *opercula*; that the opercula may be stripped off from the ends of each one of these cells. But, that in some preparations which have been affected by reagents, a ribbon can be detached from a row of these cells which is composed of several of these opercula united together so as to *apparently* form a

continuous membrane. This would, of course, conform to Huxly's *membrana præformativa*. Now, as to the formation of the enamel, Dr. Magitot says: The enamel-prisms are formed directly from a sort of *exudation* produced by each cell, which passes through the little opercule that closes or covers its extremity. The calcification of this exudation takes place upon the dentine-cap, and between it and the opercule. Each enamel-cell thus forms a complete prism.

From this it may be seen that these membranous opercula constantly intervene between the forming enamel and the enamel-cells, and might be raised from the surface of the former as a continuous membrane by the action of reagents. So I see no conflict in the histological descriptions of Huxly and Magitot, except that in one this membrane is naturally *continuous*, and in the other it is *made so* by the artificial union of the many opercula.

If I understand the theory of Kölliker and his school correctly, it does not materially differ from the above. He considers the enamel the product of the secretion of the enamel-cells, which exudes from the basal extremities, each cell forming an enamel-prism. Kollmann is also in accord with these authors as to the enamel being a hardened excretion of the cells, and claims that the free extremities of these cells are invested with a membrane which afterwards becomes the *cuticula dentis*.

This is a brief and, I believe, a tolerably correct synopsis of the views entertained by a few of the leading histologists whose opinions upon this subject have been most prominent.

Tomes, father and son, ably defined their theory that the enamel-cells become calcified, and, though they admit that a membrane may be raised from the surface of the young enamel, they consider it purely an artificial product, and the result of the action of acids on the most recently calcified portions of the enamel-cells. The histological facts that they adduce in support of the artificial character of this membrane, if they are admitted, it seems to me, are conclusive, and fatal to the theory that a true membrane exists between the forming enamel and the enamel-cells. For if the enamel-cells that are removed from the developing enamel are correctly figured by these authors, *i. e.*, if long processes are drawn out from the axial portion of the calcifying prism; and if the membrane which may be raised from the devel-

oping enamel is regularly perforated with holes corresponding to the enamel-prisms; and if, again, a horizontal section taken from the forming enamel after the cells have been removed, present a foraminated appearance; if all these are established histological facts, and I am not aware that they are disputed, then it seems to me that of the two theories, the actual conversion of the cells by calcification into enamel, is far the best supported by facts. It would appear to me that the whole question hinges upon the fact of whether this is a *true* or an *artificial* membrane, and until this is determined by chemico histology, the physiological phenomena that take place in the formation of the enamel must be conjectural.

But whether the enamel-cells are actually converted into enamel-prisms, or whether the latter are the calcified secretion of these cells, the question naturally arises, and the answer must be the same in *either case*, "Through what media are the lime salts obtained, of which the enamel is mainly composed?" This is an important physiological point, and one that is immediately connected with the question just discussed.

With the exception of Beale and Castanié, who claim to have found capillaries in the *Stratum Intermedium*, histologists, so far as I know, are either silent in regard to the presence of vessels in the enamel-organ, or they deny their existence altogether. Though this is *primarily* an anatomical question, it has also its physiological bearings on the development of the enamel. For, notwithstanding the general belief that the gelatinous mass, which forms the greater portion of the enamel-organ, filling up the interstices between the stellate cells, "has no more important function to perform than to fill up the space which is to be subsequently occupied by the growing tooth," it would seem to me *more than probable* that this proteine substance is a store-house of phosphate of lime, which stands ready to yield its supplies whenever called upon by the enamel-cells. This I believe would be in accordance with known chemical and physiological laws. This gelatinous or albuminous mass would, of course, receive fresh supplies of calcareous material from the rich plexus of vessels which surround the enamel-organ. But it would always hold a supply in *reserve*, which might be drawn upon in case the external sources should be temporarily interrupted by exanthematous affections, or other causes.

Gentlemen, knowing your partiality for short papers, I have tried to comply with your wishes. If you are not tired of this subject, I will, during the discussion, attempt to explain the subject more fully, by the aid of the pictures which hang upon the wall.

ALVEOLAR ABSCESS.

F. W. SAGE, D. D. S.

(Continued from page 214.)

THE fact adverted to in our first communication on this subject, that the opening of the apical foramen preparatory to treating an alveolar abscess frequently excites acute inflammation, leads us to inquire what are the indications of the *inflammatory diathesis*, and how can we predetermine whether or not in our treatment of a case we are likely to aggravate the morbid condition? Unfortunately, but little of practical value bearing on this question has been discovered by pathologists. We learn that persons of sanguine temperament, characterized by plethora, with inordinate capillary activity, are most liable to internal inflammation; that the habitual use of stimulating articles of diet predisposes to inflammation, or that, on the other hand, the lack of nourishing food, resulting in an impoverished state of the system, is indicative of a like predisposition. Observation teaches us that the young and vigorous are exempt from such serious, obstinate complications as frequently arise in the case of the elderly, enfeebled patient. We apprehend trouble, particularly in the instance of the pale, anæmic individual, whose pinched features indicate malnutrition; about the necks of whose teeth considerable recession of the gum and absorption of the alveolus, together with a peculiar dark, opaque, or greasy appearance of the exposed root, are noticeable. The gum above the root gives no sign of the slumbering volcano underneath. If there is a fistula it seems to be impermeable; the opening having all the appearance of being stopped by a citatrix. The treatment of such cases is usually tedious, if not unavailing; for the dental surgeon is often disagreeably surprised to find the periosteum of a very fair appearing tooth so wasted by insidious disease that the investing tissue can hardly be prevailed upon to retain it.

The purulent discharge does not in the least resemble laudable pus; and the parts appear to lack tone sufficient to insure recuperative effort. In these old, chronic cases, systemic treatment is surely indicated, although it is doubtful whether *any* measures which do not involve the removal of the tooth can be infallibly relied upon to restore the parts to health. Nature may be induced to compromise and retain the root, in many cases; but we hope in vain for a cure of the abscess even after we have filled the root. Again, we find the inflammatory diathesis in our patient of the bulbous nose and fiery red or purplish countenance induced by alcoholic abuses. Malaria, also, while it discourages our best efforts to save the hardly exposed and apparently healthy pulp, operates to increase the inflammatory symptoms which attend our first treatment of abscess. The influence of malaria upon the system may be inferred when the watery elements of the blood are discovered welling up through the root-canal with a steady, pulsating motion. This will be repeated with every unstopping of the canal. Topical treatment alone seems entirely ineffectual to correct the condition. Add to the above the modifying influence of rheumatism and gout, of syphilis, scrofula, and other cachexia, and a reasonable doubt arises whether the impression commonly prevalent, that alveolar abscess is always curable, is sufficiently well founded. In chronic cases, the coöperation of an intelligent physician would many times render our efforts towards this end more effective.

Aside from the consideration of diatheses, we learn that in general, a part having once been the seat of inflammation, is thereafter liable to the recurrence of the trouble, owing to its impaired power of resistance. The introduction of a broach into the root of an abscessed tooth may provoke inflammation in several ways: it may push septic matter into the quiescent abscess; it may, however slightly, distend the walls of the sac by acting as a piston upon the confined contents; and finally, what seems to the writer most significant of all, it may, and usually does, admit air, and thus excites further, or to be more explicit, *renewed* decomposition.

It is a fact familiar to surgeons that large abscesses may exist, in a dormant state, for months or years in various parts of the body, causing no constitutional disturbance until opened, when severe inflammation is extremely liable to ensue, resulting

not unfrequently in fatal hectic fever. The most casual observer learns that the exclusion of the air from a cut is requisite for its speedy healing without the accompaniment of inflammation more or less severe. The influence of the air in inducing inflammation is stated to be greater or less according to the length of time it is allowed access to the abscess. This suggests a query whether it might not oftentimes be found of advantage, after having penetrated through a root into an abscess, to seal the canal hermetically instead of leaving it open for the ingress of air as is usually done. This experiment would need to be very cautiously tried, watching for indications of pus accumulation. From some other experiments in this direction the writer inclines to the opinion that the method adopted formerly in blood-letting, to prevent the ingress of air to the veins, is to be recommended, to wit: the abscess, either recent or chronic, being definitely located, either by introducing a small sound into the sinus, or by discovering the point at which fluctuation occurs, the mucous membrane is drawn firmly aside and an oblique cut made down to the seat of the abscess, puncturing the bone if necessary. After the accumulated pus has been discharged, the fingers are removed and the cut closes by the released surface moving back to its wonted position. Remembering that it is the decomposition of the accumulated pus which is so productive of irritation, it is obvious that by this simple means we have greatly diminished the liability of provoking inflammation by after-treatment through the root. It is nearly always advisable, in acute abscess, to lance in this manner as soon as the evidence of pus-formation appears. The usual treatment with tents introduced to keep the cut patulous, and the injection of stimulants through the root or roots, may now be accomplished with little fear of complaint on the part of the patient; of disturbed sleep and hours of waking agony. A certain degree of inflammation is a usual attendant of nature's reparative process and need occasion no concern. Indeed, it is sometimes necessary to excite inflammation in the center of an abscess in order to induce repair. Through the cut thus made, warm water may be injected by way of the root so as to thoroughly wash out the sac, after which, in recent cases, at least, the only stimulant required is a mild solution of iodine—equal parts of iodine and alcohol— injected in like manner. In chronic abscess iodine is not so definitely indicated, indeed, it is

often entirely inoperative. Iodine in full strength is too powerful an agent to introduce into the inflamed sac.

Nearly every dentist of any considerable experience has had occasion to remark that in abscess associated with fistula the consequences attending treatment are far less likely to involve discomfort to the patient than when no fistula has yet developed. The explanation of this has been already suggested; the injections through the root force out the pus accumulated, and thus remove that which in blind abscess remains to decompose, and irritate the parts as soon as air is admitted. Moreover, the restraining wall of organized lymph, in cases of long standing, becomes thickened and to some extent indurated when a sinus exists—a result consequent upon, and favored by, the slow evacuation through the sinus of the pus. In other words, the reparative process has already progressed to some extent, as evinced by the fact that in certain cases it is evident that no abscess exists other than in the sinus itself, which may be regarded as simply a tubular abscess. The parts are thus in a state of comparative health. It is true, on the other hand, that the wall of coagulated lymph, at first healthy, may undergo degeneration, becoming shriveled, devitalized, and effete, or of a fatty consistency, as often observed upon extracted roots. In this event, however, the parts are not easily provoked to irritation, which fact may indeed be construed as indicative of a passive condition not favorable to a ready cure. To induce the absorption of lymph after it has become organized is not usually an easy task. To assume that the achievement of such an end is essential to a practically successful result in our endeavors to restore a tooth to comfort and usefulness, is perhaps equivalent to discouraging, in the outset, any attempt to save the tooth.

Now, as contrasted with this condition of affairs, consider the case of the completely encysted abscess. Its condition, as refers to Dame Nature, is one of sufferance; she awaits, month after month, some excitant to enable her to throw off the incubus of disease. The suppurative process is held temporarily in abeyance; no thickening of the circumscribing wall of lymph is going on, because the formation of pus in its center has ceased for the time being, and there is no demand for extra protective measures. But the air being once more admitted and decomposition of the pus being thereby induced, the morbid phenomena are re-estab-

lished in full vigor. Convert that abscess to the condition of one associated with fistula and you avert much of the pain which attends Nature's slower processes.

By way of modifying a statement made in a former number of this journal, touching the practice of breaking up or tearing out the pyogenic sac, let us explain that in the exceptional instance in which this course is commonly regarded as necessary—that is, when the so-called *pyogenic membrane* has undergone fatty degeneration—Nature's destructive process has, in the writer's opinion, proceeded to such a stage that the tooth can hardly be retained. Especially is this likely to prove true when the disorganized membrane fills in the space at the bifurcation of roots. If this condition of affairs could with certainty be diagnosed, we should undertake to break up the sac, if at all, by means of a pair of forceps applied to the neck of the tooth! But before we proceed rashly to hook out the sac, let us remember that this membrane is invested with important functions, and that although it may undergo other unhealthy transformations besides that of fatty degeneration,—such as becoming shriveled, or of a cartilaginous consistency, etc., as already observed,—these conditions are seldom of practical moment in retarding a cure of an abscess located in the alveolus, although in an abscess located in other parts, particularly near a joint, the matter is of more serious import. The difficulty of removing all particles of the abnormal tissue is, at all events, too great to offer encouragement to the undertaking, and while it is true that a wall of organized lymph, whether healthy or otherwise, is with difficulty re-absorbed, it is likewise true that the sac may remain for years silently enjoying its parasite existence, after the pus has been forced out and the root filled; and this, too, without any serious general detriment. Then, again, it must not be forgotten that this wall of “limiting fibrine” often becomes a vital structure, supplied with blood-vessels and nerves. The presence of pus—at least of *healthy* pus—in the sac, is not necessarily to be regarded as militating against the probability of the walls being in a vital, healthy condition, since it is to be kept in mind that the tender granulations on the surfaces of the opposing walls of a sac are constantly bathed in pus—a measure of Nature's to afford them protection. From this it appears that interference in the way of wiping away healthy pus formations from the

mouth of a fistula may be harmful. After treatment through the root to force out effete accumulations and introduce stimulants, judgment is required lest we interfere with the reparative process we seek to induce. Advocates of extirpation, we infer, look upon this pyogenic membrane as a pus-secreting organ—a something to be removed in order that Nature may begin anew upon the raw surface to which the sac has been attached, and fill the space by a process of granulation. Now that it is *not* a pus secreting organ seems to be indicated by the fact that it is not found in the early stages of suppuration, that on free surfaces suppuration occurs without it, and that in diffused and metastatic abscesses it is entirely wanting. Moreover, the opposing walls of the sac are found studded with granulations, and after the discharge of the pus, these walls frequently close upon themselves and thus heal the breach. It is even denied on high authority that any extensive process of granulation occurs, while at the same time it is claimed that this process is confined to the external opening; even this not being invariably the case, for examples occur of closure by first intention.

Homeopathy holds out flattering promises of dealing effectually with the unhealthy pyogenic membrane. Silica, Hepar-Sulphur, and Mercurius, are the remedies of that school employed to promote absorption.

In conclusion of this branch of our subject we have only to repeat that discrimination is required to enable us to avoid unnecessary interference with this membrane. Unless it can be made apparent that the parts can not be restored to health without destroying it, there is no sufficient reason for the measure. By way of averting the more serious consequences to the patient's health, of opening abscesses, a full anodyne is oftentimes required. If the dentist has not enjoyed the advantage of a medical course, he should refer the patient to a physician, for there is no class of remedies requiring careful judgment and discrimination in their use more than anodynes. The hypodermic injection of morphia, formerly regarded as so simple and safe as to be entrusted to the patient himself, is now looked upon as hazardous, even in experienced hands. Among the simpler auxiliaries within the reach of every dentist who may feel disposed to prescribe for inflammation, are diaphoretics and cathartics. With the action of these remedies all are familiar; still it is doubtful whether the majority

of even the most intelligent practitioners practically regard their value. The administration to an adult, of from ten to fifteen, or even twenty grains of Dover's powder, repeating the dose from eight to twelve hours later, during severe inflammation, often affords marked relief. The patient should keep his room, and aid the action of the remedy by using tepid drinks, such as warm lemonade, etc. The application of cold water to the inflamed gum, in the *early* stages of acute inflammation, applying the cold gradually, is advantageous as a sedative. If the inflammation be far advanced, warm water should rather be employed, as a general thing, though in the use of either warm or cold water, the toleration by the parts, of the application, will usually serve as a safe guide. Of the cathartic remedies employed where the inflammation is external, an infusion of senna combined with Epsom salt, and a carminative (to prevent griping), is very effective. Any druggist will prepare this without the necessity of furnishing a prescription. Homeopathy furnishes an almost interminable list of remedies for the various grades of inflammation attending alveolar abscess. Whatever constitutional remedies are employed, however, their intelligent use can only be assured by a careful course of reading on the subject of inflammation, acute and chronic, and its treatment—a department of the field of general medicine which may be regarded as sufficiently distinct and complete in itself to enable one of limited acquaintance with the science in its wider scope, to arrive at a thorough knowledge of all it embraces.

Before leaving this subject, your contributor wishes to indorse the opinion expressed by a writer in a recent number of your journal, that injection through a sinus into an alveolar abscess by means of a syringe, is not generally to be recommended. It must be obvious after what has been already said, that by this method no evacuation of the sac preparatory to the application of the stimulant to the walls of the abscess, is contemplated, whereas that is *the* important, preliminary step. This method of applying treatment to the abscess may actually retard a cure by distending the walls of the sac and forcing it downward (or upward, as the case may be), forming a pocket at its most dependent portion, from which the pus can with difficulty be washed out. By persistent effort communication through the root into the abscess so as to admit of forcing medicament out through the fistula, can

nearly always be established. If the effort fails at the first sitting it will usually succeed at the second, if glycerine be employed as before suggested. That all the roots of molars should be penetrated through to the abscess and thus treated, is an unwarrantable inference; only the root or roots discovered to be in communication with the sac should be so treated; the others frequently require only to be repeatedly washed out and disinfected, or, if too small, to be penetrated by a fine broach, may be let alone entirely.

If it were reasonable to expect that healthy pus in a sac could be reabsorbed, then treatment through the fistula by means of a syringe might often be admissible; but pus *in the form of an abscess*, is never reabsorbed. The better plan, therefore, is the one suggested by the gentleman whose objections to the use of the syringe we second — use a soft rubber piston in difficult cases, to force the medicament through the root and out through the fistula.

It is fortunate for us, of the dental profession, that the various forms of abscess which in other parts of the system often involve serious complications and require careful discrimination on the part of the surgeon to determine the course of treatment, do not, as exhibited in the parts under our notice, frequently involve the constitution in consequences of a very serious nature. Notwithstanding this consoling fact, the exceptions which occasionally are presented, afford one of our strongest arguments for the necessity of a liberal medical education for all dental practitioners. Of the value of a general knowledge of the human constitution, which would better enable us to apprehend the nature and manifestation of scrofula, syphilis, erysipelas, pyæmia, phlebitis, hectic, and various other conditions which ought to modify our treatment of oral lesions, who can make an estimate? In the midst of all the clamorings for recognition as medical specialists, let us stop and consider whether our researches in the fields of medical lore, to which our attention has been directed by the exigencies of daily practice, have been as thorough and exhaustive as the opportunity affords. The medical practitioner, by virtue of his having covered a far wider range of subjects, is better prepared for the deductive process of reasoning, by which he is enabled to collect light and establish satisfactory theories to explain phenomena which to us, limited by an inferior education

and confined to the inductive processes in pushing investigation, are shrouded in mystery. That the material exists for constituting our profession a specialty of medicine, no one informed as to the scope of dentistry in these latter days, can deny; that our system is as perfectly organized as the opportunities which offer for the collection of information on all its collateral branches might be presumed to demand, there is room for doubt. With these gratuitous remarks on a subject not perhaps very closely allied to the subject announced in the caption of this article, we are prepared to close.

THE MERITS OF SOFT AND COHESIVE GOLD, AS FILLING MATERIALS.

BY A. A. BLOUNT, M. D., D. D. S., GENEVA, SWITZERLAND.

[Read before the American Dental Society of Europe.]

At a meeting of the American Dental Association held in Boston, the merits of soft and cohesive gold were discussed by many of the prominent dentists in attendance. By a careful perusal of the remarks of these gentlemen, it is plain to be seen that but few of them entertain similar views. One gentleman "thought that a young man who came here to learn how to fill a tooth would go home without knowing how any better than when he came." It is not necessary to re-capitulate what was said during this discussion, as every reader of the transactions is already familiar with the views expressed by these gentlemen. In my opinion our greatest failures may be attributed, not to the preparations of gold we have used, but to the style of instruments. I do say, most emphatically, that no dentist who uses cohesive or heavy foils can make as perfect a filling with serrated points, as he who has the same preparation of gold with smooth oval points. One gentleman spoke of the cohesive gold "drawing away from the walls of the cavity," that it would "ball or bur up towards the center." That is not the fault of the gold, but the natural result of the use of serrated instruments and the mallet. Every gold beater will tell you that it is impossible to beat out gold into foil with a serrated hammer. Your hammer must be oval on its face. The same law applies to our instru-

ments. In order to obtain a lateral expansion of the foil, the face of the instrument must be smooth and oval.

I propose to present to this association a method entirely new and original in the manipulation of soft and cohesive foils; a method which I am sure every dentist will admit after a careful and thorough trial, to be the most rational method of filling teeth with these preparations of gold.

We all recognize the fact that *soft* foil packed against the walls of a cavity *will* make a perfect filling, as the contact of the gold with the tooth is *perfect* and *complete*. We all know, as well, that *cohesive* foil packed against the walls of a cavity does *not always* make a perfect filling, because we are never *sure* that the contact of the gold with the walls of the cavity is *perfect* and *complete*. We are also aware that a tooth filled entirely with soft foil has not as lasting a filling; that is, it does not wear as well as one made of cohesive foil. We often see a filling of cohesive foil standing perfect and beautiful as the day it was made, with the walls of the cavity blackened and decayed around it. We see, as well, fillings of soft foil rough and unsightly, and so soft sometimes that we can easily pierce them with an excavator, but yet the tooth presents no signs of further decay.

An experience of nearly forty years in the use of all the recognized methods of filling teeth with the various preparations of gold foils, with as many failures, and, I trust, with an equal share of success, as others, I am free to acknowledge that I never understood the proper method of manipulating soft and cohesive foils till within the last year.

Taking all the recognized facts as I have stated them above, the idea presented itself to me, why not adopt that which experience has taught, viz.: put *soft foil* against the *walls* of the cavity and fill in with hard or *cohesive foil*? It is very simple and very easily done. There we have the two desirable results which we strive so hard to obtain—*perfect adaptation* to the walls, and a surface that will resist the action of mastication. What more can we wish? and what more can we accomplish?

I will as briefly as possible attempt to describe my method of manipulating. It is impossible, in a brief article, to enter into all the minutiae or present the various difficulties that we will have to encounter; but our experience and judgment will teach us how to overcome them. It is necessary only that we should have the

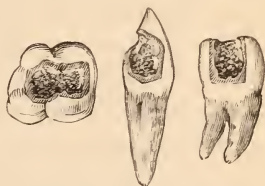
principle, and then let us apply it according to our light. One important idea, however, should govern us in beginning an operation, viz.: to reduce every difficult filling, as far as possible, to a simple one. This we can best accomplish by filling all the difficult or inaccessible portions of the cavity first, thus leaving only a plain, simple cavity to finish, which we can do easily and rapidly.

We will suppose our cavity to be an approximal one in a molar or bicuspid: we will commence the operation by lining the cavity, beginning at the cervical wall where we have already prepared it in such a manner as to retain the foundation or starting piece of our filling. Let us begin with *soft foil*, and fill this point thoroughly, allowing the gold to extend over or beyond the border; continue this lining of *soft foil* on the lateral walls until we have reached the grinding surface, all the while allowing the gold to extend beyond the borders as in the beginning.

If the cavity at the grinding surface is V shaped, line it also. Then we will place a large pellet against the back of the cavity, packing thoroughly but lightly which will serve to hold the whole in place, and complete the lining process of *soft foil*. We will use the Varney foot instrument with light blows of the mallet, or any other style of instrument with hand pressure, as we may best accomplish the work, but let the *pressure* be *all the time against the walls* of the cavity.

Now let us begin again at the cervical wall as before, only this time with *cohesive foil* and *smooth, oval pointed* instruments, placing *over* the soft a layer of cohesive foil of sufficient thickness to insure perfect solidity. After having thoroughly covered the soft with the cohesive foil, finish the borders, especially the cervical border completely, as this can be accomplished more easily at this stage of the operation than after the filling is completed. This we can most readily do with the *flat* side of our instrument, driving the gold over the edge of the enamel, burnishing it down in such a manner as to insure a complete adaptation of the gold to the edges of the cavity. Now we have completed the most difficult part of the operation, leaving only a plain, simple cavity to fill which may be done very rapidly, as we have no frail walls to retard our progress, they being already covered and protected. We may use pellets, cylinders, blocks or any preparation of gold that will fill most rapidly and give the hardest surface and the greatest resistance to mastication.

During the whole of the operation let the pressure be, as in the beginning, *against* the *walls* of the cavity, however frail they may be. The soft foil yields under the pressure of the hard, and thus prevents the danger of fracture and at the same time gives support and strength to the frail enamel. I present for your inspection a few specimens of teeth, with the lining of soft and cohesive foil, together with the smooth pointed instruments which will give you a better idea of the method than my imperfect description. One of the specimens, you will observe, is filled on the buccal surface, the lining being of *tin foil* filled in with hard gold. This combination of metals without the use of mercury, by some chemical process, possesses the peculiar power of hardening, or calcifying the soft and chalky enamel and dentine we so often find in cavities in teeth of young persons. This manner of combining tin and gold will give the same results as that recommended by him whom we all take pleasure in honoring, the *pioneer* of American dentists in Europe, our much esteemed friend, Dr. Abbot, of Berlin.



Societies.

"Two are better than one."—SOLOMON.

PULPLESS TEETH.

BY PROF. A. O. RAWLS.

[Report on Pathology to the Kentucky State Dental Association.]

WHILE your committee has nothing to present which would come under the head of new pathology, it has deemed it proper to take a retrospective glance looking to a reconsideration of at least two pathological conditions. I refer to the pathology of pulpless teeth, and that condition known as *pyorrhæ alveolaris*. It is true that much more could be written upon either condition than it is possible for me to present to this society without consuming time belonging more properly to other subjects; and my

only excuse for thus writing these comparatively distinct conditions lies in the fact they are only partially distinct, and, in some respects, have kindred aspects, and are associated more or less closely with each other in relation to surrounding tissues involved. The principal objects which I seek to attain, in reporting upon these conditions, are first, to show the inconsistency of much of our so-called conservative practice; second, to enlist your appreciation of, and interest in, certain physical and vital characteristics, which, though variable in degree, are nevertheless always present in these pathological conditions, and which, though generally known to the profession, are too often ignored in practice, as well as in estimating the degree of success resulting from such practice. As an evidence that we need retrospection, and are lacking in consistent practice, it is only necessary that we refer to one instance, viz: the almost invariable inquiry when these subjects are under consideration, for some specially definite and absolute mode of cure, thus evincing, if not a want of knowledge, at least a lack of appreciation of the vital, the physical, and other characteristics, which are constantly present, though seldom, if ever, in like degree or amount in any two cases. *A practice based upon such an erroneous conception of its underlying principles cannot be progressive, and can be conservative only by accident.* We now enter directly upon the pathological conditions of pulpless teeth; and that I may not be misunderstood, will add that, by pulpless teeth, is meant all teeth in which the vitality of the pulp has been destroyed, regardless of whether the tissues of the same are intact, dissolved, or entirely absent. The tooth thus deprived of its internal source of life presents several pathologic aspects, always varying as they are or have been influenced by the chemical, the vital and physical characteristics of the part involved; and yet these several aspects are commonly considered and treated as one distinctive phase of disease. No matter how long the pulp has been dead, nor, upon the other hand, how short the time, we have death present in at least two of the organic parts of the tooth, viz: the dentine and enamel. Now, though death, *per se*, in these parts, does not constitute a pathologic condition, but is the result of one, the parts, nevertheless, in this case, act as a producing cause of further pathologic action, by the force of their integrity permitting them to remain, more or less, in conjunction with living tissue. Thus the enamel, at its junction

with the *cementum*, becomes a source of irritation to the latter at the point of contact. This is equally true of the dentine where it touches the *cementum*.

Now it may not, according to the general usage of the word irritation, be correct to apply the term to parts in which there does not exist arterial and venous circulation; but whether correct or not, there are conditions dependent on the death of the dentine especially, which are more or less incompatible with the health and life of the surrounding *cementum*. Here comes the question, "In what does the incompatibility consist?" or, in other words, whence the disturbing or morbid agent? I answer that it arises from one of two conditions, or may arise from both. The general impression is that since the dentine and *cementum* are not analogous in their structure, and that one being furnished with nutriment from without, and the other from within, that accordingly there is no continuity of nutrient circulation from one to the other, but that they are separate and distinct tissues.

Taking this view of their anatomico-physiological relations, we have them in apposition, just as two serous membranes might be in contact. Now, in this event, we have, as one of the conditions productive of morbidity, contact with the *cementum* of substances once possessed of compatibility, of life, of chemical affinities in consonance with the integrity of its structure, and adapted nicely to the health and strength of its surrounding tissues, but now totally devoid of such characteristics, and in obedience to other metamorphic influences at variance with those now fighting to exist in the contiguous structure.

It is therefore no more strange that the dentine in this condition should act as a source or cause of morbidity in the *cementum*, than an inflamed serous membrane should induce pathologic conditions in surrounding and approximate tissues.

Looking at these cases from the other conception of physiological and anatomical relations of dentine and *cementum*, viz: that there exists either a partially or perfectly continuous play of nutrient affinities between the two substances, we have all the morbid influences of the first conditions in addition to which may be reckoned those influences which inevitably follow the discontinuance of physiologico-chemical relations. No matter, however, from which standpoint of anatomical and physiological

relation we view these cases, the causes inciting to morbidity in the surrounding vitalized tissues, though not the same in quantity and activity, nevertheless tend more or less rapidly to the same results.

The forces operating in opposition to the life of the *cementum* and integrity of dentine and enamel, must, of necessity, vary with the age of the patient, (this, of course, when all things else are equal), for it is in accordance with the laws of our development that all bony structures increase in density with advancing age. Now this means that earthy matter becomes more abundant and in inverse ratio, the animal fluids containing the nutrient supply, less abundant, as a consequence, the *canaliculi* of the dentine, the interspaces between enamel rods or prisms, and the so-called lacunæ of the *cementum*, are less in their dimensions in manhood than in youth, and in youth than childhood, the bearings of these variable aspects upon the conservative treatment of them are certainly sufficiently evident to justify careful recognition. Other pathological conditions associated with these cases, and which seem to receive more attention than those mentioned, are those existing at the apex of the root or roots of pulpless teeth.

The anatomico-pathological and chemico-pathological lesions, at the points referred to above, vary according to age, constitution, integrity of tissue, conformation of root canals, conditions favoring drainage or absorption, and the length of time since the pulp tissues ceased to perform their function. This, among the different pathologic conditions which are in part due to the difference in age, we note first, that the teeth of children and those teeth which are perfected only later in life, present an anatomical aspect at the apex of their roots, which render it impossible for the pulp to be destroyed without involving a much greater amount of structure beyond and about the roots than would take place under the effect of similar destructive agents in the teeth of older persons. Again, in these cases, the separation between the living and devitalized tissue is not as quickly and sharply accomplished as in teeth perfectly formed.

Now, the reason for this difference is obvious, and lies in the fact that teeth not fully developed are largely open at the apex of their roots, which admits of greater amount of soft tissues external to them, and does not favor strangulation and drawing

the line of demarkation so quickly or definitely, when irritants are applied to the pulp, as if the roots were more nearly closed, which is the case with completely formed teeth. So again, in the matter of constitution, integrity of tissue, etc., we have the effects and results under treatment of pulpless teeth varied or modified, and why? Is it because of some peculiar or mysterious force in maximum or minimum degree? or are we cognizant of an entirely material, tangible one? How often we hear of this mysterious vitality made use of to account for the want of a proper appreciation of the veriest physico-chemical laws! If the constitution be good, according to its type, the resistance to irritants and encroachments of disease, will be strong in the tooth substance, for two reasons, the one resultant from the other; the first arises out of not only a well balanced assimilative function, but also a powerfully active assimilation of nutrient material,—in other words, a sharp, decisive action of affinities. This taking place in the unorganized elements of the tooth structure, gives us the condition from which the second cause of resistance arises, viz: the integrity, the denseness, the compactness of the organized dentine and cementum. On the contrary, when these forces of assimilation of affinities are weakened, as in the case of an enfeebled constitution, so also is resistance to dissolution lessened. The peculiar formation of root canals in some teeth, though apparently of little consequence, often proves a source of no little mystification to the dentist. They occur principally, if not altogether, in the teeth of manhood and old age; and, so far as we are able to judge, result from either perverted or locally intensified nutrition.

The formations referred to are those wherein exist, at variable points along the length of the canal, what we may with propriety term strictures, the diameter of which is the same, or may be less than that of the opening at the apex of the root. It will readily be seen that, under such circumstances, it will be possible for the tooth to be pulpless and yet contain tissue within a portion of the canal, manifesting any one of the pathological states to which such structure is liable, from simple determination of blood to complete death, and consequent further complications of tissues beyond the root. The length of time which the pulp has been dead, of necessity carries with it the possibility of variable pathologic conditions as well as variable physical aspects.

These are mollified or intense, accordingly as vitality is strong or weak, tooth structure dense, or open points of pulp exposure large, small, or not existing, and the drainage favorable or unfavorable. I could recite to you page after page of these varied and various pathological characteristics, as they are associated with equally differing chemical, physiological, and physical conditions; could call your attention particularly to a minute consideration of the physical character of roots of teeth, where more or less absorption had taken place, and to these peculiarities as factors in the support of diseased action, could dwell upon the difference between pulpless teeth, with wide open exposure, and those so often troublesome ones into whose nerve canals no caries or instrument has penetrated; and, last of all, could remind you of the numberless so-called successful cures of these cases with bits of pulp or nerve tissue still remaining and decomposing, with dentine and enamel disintegrating, gum and process receding, denuded and roughened roots, with miniature volcanoes of corruption emptying therefrom. But enough, I trust, has been mentioned to convince us that practice is not always consistent with the known laws of chemistry, physics, and life—enough, I also hope, to teach us to make application of our knowledge of these laws to cases in hand, to warn us against untruthful statements to our patients, which might grow out of superabundant confidence in our ability to practice conservative dentistry; and yet enough to encourage honest, consistent practice in our efforts to secure, as nearly as possible, successful results.

THE OHIO STATE DENTAL SOCIETY.

WILL hold its sixteenth annual meeting at Columbus, commencing Wednesday, December 7, 1881, and continuing three days. The State Board of Examiners will be in session at the same time and place, to examine applicants for license to practice.

W. H. SILLITO, Xenia, O.,
Recording Secretary.

SUBJECTS FOR DISCUSSION.

1. Preparation of cavities for gold fillings.
2. What shall be done with the first permanent molars?

3. Methods of mounting artificial crowns on the roots of teeth.
4. Diseases—cause and treatment—of the maxillary antrum.
5. Histological structure of the teeth.
6. Oral Surgery.

Editor's Specials.

“Wisdom is better than weapons of war.”—SOLOMON.

RECUPERATIVE POWER IN THE MOUTH AND FACE.

CONSERVATIVE surgery receives more attention now than in our early professional experience. The reparative powers of a healthy human constitution can scarcely be estimated. This is noticeable in all parts of the body, but especially in the region of the face. It is not yet known how much the face may be marred and mutilated, and yet restored to a quite presentable appearance, by time and proper attention. One of our friends was beaten beyond recognition by a midnight assassin. His face and jaws were a mass of cuts, bruises, lacerations, and comminuted fractures; and yet, after a lapse of a few years, his personal appearance is better than that of the average Anglo-Saxon.

Dentists are familiar with restored alveoli—with the fact that new bony material is deposited to strengthen and deepen the sockets, and thus, teeth so loose as to be useless, and even a barrier to mastication, are tightened and restored to activity. They are familiar with the replantation of teeth, and even with their transplantation, with results satisfactory to all concerned.

To relieve obstinate facial neuralgia, surgeons sometimes remove sections of nerve trunks, thus cutting off communication with the brain. It is a familiar fact, however, that the relief thus afforded is not permanent. In time the nerve connection is reëstablished, and, in many cases, the pain returns. Surgery was daily demonstrating this for years, while a certain class of physiologists were teaching that lost nerve substance could not be restored. We know, by personal experience, that severed nerves re-unite. The tip of the index finger was wounded by a drill. In a few hours there was well defined tetanus. The nerve was cut off above the wound, and though the tetanus was relieved,

the end of the finger was benumbed. Within a year the sense of feeling and touch was fully restored.

In years past there was, and it is feared that even yet there is, a want of confidence in the recuperative powers of nature, which has resulted, and may yet result in disaster to the race. A few cases may illustrate what is meant: A boy five or six years old pulled over a table and knocked his upper incisors out of their sockets. They were hanging to the inner margins of the gums, with the roots fully exposed, the pulps of the permanent incisors adhering to them. The family physician removed the teeth, and the boy afterwards marched with Sherman to the Sea, but without upper incisors. The physician was not criticised then; but his course would be counted bad practice now. The teeth should have been carefully replaced, and retained by suitable splint, or compress; and even if irregularity of the permanent teeth had resulted, irregular incisors would have been found much better than none; and it is not probable the irregularity would have been too great for correction.

At the meeting of the American Dental Association in 1867, we referred to a tooth replanted by Dr. J. Taft in 1843. This tooth was out of the socket but a few minutes. We saw it a year ago, and found it a perfect tooth in every respect, and having perfect union with the socket. We may refer to it again.

At that same meeting (see page 111, of the Transactions), we reported the case of a young man who had three upper incisors knocked out while he was intoxicated. We replaced the teeth after they had been out from three to five hours. A member asked if the pulps had been removed previous to replacement, and we gave a negative answer. Another inquired if we expected the pulps to regain a vital connection with the system; and we replied that we had faith enough to give Nature a chance to do her best. These teeth regained a normal connection with the socket, and the pulps of the centrals had full connection with the system, which was demonstrated by their extraction, after they had been serviceable and comfortable for several months. Unfortunately, the patient had more confidence in his priest than in his surgeon, and had these good teeth extracted through superstition. The lateral we did not see at the time of its extraction.

In Dr. Taft's case of 1843, the pulp was alive and normal in

1880. Dr. Herriott (see page 113, same Transactions) reported a case replanted in 1857, and six months ago (ten years after replantation) it had decayed to the pulp cavity, and the pulp was alive.

Dr. Kennicott stated that many years after his central incisors had been knocked out and replaced, they decayed so as to require filling. They were filled by his brother, who found the pulps exposed and alive, and, said Dr. K., "they are alive yet."

Now all these cases occurred with men of wide experience, capable of making reliable observations. They do not desire, and cannot afford to bolster up any false theory. Their opportunities for observation have been good. Then "what need we any further witness?" It follows that the facial and oral organs have reparative energy beyond the estimate of the average surgeon. It would seem worth while to give Nature the benefit of the doubt in any case that may occur.

But when we consider the face, and think of its endowments in vascular and neural force; think, too, of the shortness of its muscles, and the abundance of bony texture, comparative stillness and rest being thereby secured, we need not be surprised. We should certainly presume on these facts in our diagnosis, prognosis, and treatment.

From our reading of the dental periodicals, and especially the transactions of societies, we incline to think that nearly all dentists who replant teeth think it important to clean out and fill the pulp cavities and canals before replacing; but if the cases of Drs. Kennicott, Herriott, Taft, and Watt, are types of what may be done, the practice is uncalled for, if the pulps are healthy. The impression is the pulp dies as soon as the tooth is extracted, but this is not necessarily the case; and that nerves and vessels may unite here is not more strange than that they do so elsewhere, especially in a bony canal after the removal of a section.

All are familiar with the fact that pulpless teeth are not lasting. It is, therefore, very important to save the pulp wherever it can be saved. Does any one suppose that, in Dr. Taft's case of 1843, the tooth would be as good as ever, if he had removed the pulp before replacing it?

The physiology of cementum is but partially understood. It retains vitality, or at least viability, for a considerable time after extraction, and the vital force seems to be competent to

form new periosteum to unite with it, as is seen in the formation of artificial sockets, in whole or in part. We have removed the entire periosteum from the root, when diseased, by scraping with an ivory knife, before re-inserting the tooth, and this with satisfactory success. It is not probable that such reparation would occur on ordinary bone tissue—less probable still on dentine. Some carefully conducted experiments are yet necessary to determine the possibilities pertaining to cementum.

Many years ago, William Jones, M. D., of Kenton, Ohio, reported in one of the journals (the *Dental Register*, perhaps,) the reproduction of an inferior maxilla, from the condyle to the symphysis, after the loss of its predecessor by necrosis. A similar case occurred in the practice of the late Dr. A. M. Leslie. A young Miss D. lost half the lower maxilla, which was replaced by a new bone, which had at least one tooth, as we can attest from our own recollection. As strange results are now not uncommon with other bones, but these cases were regarded as remarkable at the time of their occurrence, and awakened attention to reparative possibilities; and this attention has resulted in the saving of many a member that would, otherwise, have been consigned to the knife.

If by this writing we can excite any to increased earnestness in conservative dental and oral surgery, we shall reap our reward. If we can arouse an increase of faith in the powers of Nature to preserve valuable organs, good must result. For it is as true now as in 1867, when Prof. J. Taft said he “thought that many in our profession failed to give their patients the best that our science affords, for want of faith in the recuperative powers of the constitution, and want of confidence in their ability to accomplish what is desirable. This want of faith is often fatal. A man seldom succeeds in that which he regards as impracticable. * * The man that believes he *can*, and is determined that he *will*, seldom fails in any department of dental surgery.”

MORE THAT IS FUNNY.

IN a June special we referred to a Report on Dental Nomenclature and Terminology, made to the American Dental Association, by the chairman of one of its standing committees. We

spoke of the language of the report resembling the writings of the ancient, renowned philosopher, Benjamin Beryl Blynx, President of the Gynecogelyrian Academy of Science and Art, Superintendent of Cavalry, and Veterinary Surgeon to His Royal Highness, Morasticorlander the Great, and inventor of Haul-water to the Gynecogelyrian Horticultural Society.

We argued that sameness of style is no evidence of plagiarism, but rather the reverse,—that massive minds of equal greatness, must think alike, and must, therefore, express their thoughts in similar strains. To demonstrate this similarity, we quoted from the report on Nomenclature, and from Blynx on cavalry horses. Their language was as similar as their subjects; and now, through the kindness of a friend, a nice little volume, full of similar language, is laid on our table. It is called “Elements of Universology, an introduction to the mastery of Philosophy and the Sciences (with special reference to music), by Stephen Pearl Andrews, author of * * * Universology and Alwato, etc.” Thus, three great souls whistle their music through the same pipe, and wield their wondrous wisdom in words more wonderful than their wisdom. This trio consists of the Ancient Blynx, the chairman of that committee, and this “Pearl” of great price. Alike in mental endowment, and equal in powers of thought, they “alwato” use the same language, and they do. And it is as interesting, and nearly as intelligible as is the music of a million blackbirds over a cornfield in early autumn.

Here is a specimen of “Pearl,” at random strung:—

“85. Assume se, ma (pronounced *say-mah*), to mean shape, form, figure:

DISTRIBUTION.

I. I, aw, sema, Infinital form (Limitandary.) I, aw, sema (*ee-ah-oo-say-mah*) is, then, ingrediential, componential, or infinital form, at large, which subdivides into the following twelve grand departments:

1. i, sema (*ee-say-mah*), entical, ontical, centric or centroprolated or LENGTH-wise form; (as a measuring reed, line or chain.)

2. e, sema (*ay-say-mah*), related, lateral, or WIDTH-wise form; edge side, expansional, extensional or ground-form (geometricoid, as the legs of an angle, dividers or callipers, etc.)

We have not room for the remaining ten "grand departments," but they are even more so; and not many living are able to use such language, but they "alwato."

Above we have given a true extract from the little book; and now, if the reader will consult the works of Benjamin Beryl Blynx, in volume nineteen, page 977, Bagdad edition, he will find the following:

DISPERSION.

To I. oa, senna, jalapa, constipational shape (*out-endery*.)

I. oa, senna, (*ee-oh-ah-physic*) is, then, constipatental, purgatential, confinital shape, let loose; which divides into ten grandiliferent assortments:

1. i, oa, senna (*e-oo-ah-sane-nah*), intical, uptical, throughtical, downtical, or GRIPE-wise; as a dose of physic.

2. e, senna (*ay-say-nah*) purgatil, gripital, or COLIC-wise pain; outside, contractional, EARTH-shape (*coverupricoid*, as the lid of a commode, or covers in an earth-closet or micturitionery.)

Lack of space forbids a longer quotation from Blynx. We are allowed to use his language without credit marks. In June we gave a specimen of the report, and compared it with a selection from Blynx. Now we have quoted the "Pearl" of the trio, and a corresponding paragraph from the ancient Nazarite. The reader cannot fail to see that the language has been dictated by the same spirits. With our present limited attainments we are not able to catch a single idea from the language of any of these renowned authors, but so much the better. Words were invented for the purpose of concealing thoughts and ideas. Any boor can give vent to his ideas and express his thoughts by merely allowing legitimate words to take their natural places; but it requires the greatest talent and the most extraordinary skill to handle them, as can any of this trio, so that not an idea can be deduced, or a thought suggested by anything they say.

After all, it may be doing injustice to the renowned Benjamin B. to class him with the other two. Some think he adopted the style under consideration mainly for his own amusement, and to show how words can be fluently used without saying anything. We hope this is so; but it is evident that the other two are in bloody earnest.

THE MIGHTY HUNTER.

WE learn from inspiration that Nimrod was a mighty hunter; and we know from memory that Uncle Solomon Bishop was, too. Deer were the delight of the latter, and much of our boyhood's bliss lay in listening to the startling stories of his adventurous achievements. Said he: "One day I was in my favorite forest with my faithful flint-lock, and beheld a buck with his broadside presenting. I felt a delight in the coming luxuries of a new leather apron, and a saddle of venison. So I raises up, takes aim, and fires away; and she snapped!"

Another hunter is revealed in the October number of the *Missouri Dental Journal*—not hunting for deer, but apparently for occasion to find fault with the American Dental Association, yet possibly for students from the territory of the Southern Dental Association. If for the former, we think "she snapped!" The Association adopted a resolution defining a condition of membership. And who shall decide, if it may not? If a society decides that it will not receive as a member "a man in the land of Uz, whose name was Job," neither the fellow who was "going to and fro in the earth," nor any other man has cause to complain. The Uz man can join the Southern Association of Stock Raisers, whose terms of membership are less restrictive in this one direction, or he can get up a new society, and have himself elected president and secretary.

The writer seems to charge a want of equity on the part of the American Association, because it does not bring to its bar and reprimand the Southern Dental Association. But it has never pretended to reprimand or bring anybody to its bar. It hasn't been punching the writer's college. He has had an ugly dream, and should avoid late suppers.—advice for which nothing is charged unless it does him good. It would be quite as consistent to blame the Association for excluding lawyers, carpenters, etc., from membership; and the writer under consideration admits all this when he says, "We do not question the abstract right of every organized body to prescribe the qualifications of its membership;" and this statement makes his whole effort appear more like a hunt for the other game, which we sincerely hope he will find and capture.

The last time the American Dental Association met in Cin-

cinnati, several hours were wasted in discussing whether or not it had a right to define the qualifications of membership. We shall be sorry if the next meeting is to be marred in the same manner; and we are sorry to see the question opened up again by a man so sensible as our old co-laborer, who is not in the habit of going off at half-cock.

If the Association, in defining the terms of its membership, can elevate the standing of the profession, educationally or otherwise, there is just so much clear gain; nor is its change of membership, from year to year, an objection in this respect, but the reverse. Were it otherwise, it would tend to degenerate into a clique or clan. The general assemblies, conferences, etc., of the various churches undergo constant changes of membership, yet the churches neither lose identity nor degenerate in doctrine. If "the common sense and enlightened judgment of the profession at large, and not a fractional part of it, * * * should be the judge," as suggested by the writer, these can come nearer finding expression through the American Dental Association than through any other channel now open.

The tone of the article sounds as if it were intended to antagonize one association with another—to create discord where only harmony should exist; and, therefore, we are sorry the article was written—written, too, by one whom we highly esteem and who is generally right. With its personal allusions we have nothing to do. They don't strike this way. We write because we don't want the old Association to be wounded in the house of its friends.

"AND HE DIED."

"AND all the days that Adam lived were nine hundred and thirty years; AND HE DIED." So records the sacred history in the biography of the first man. And so it says of his son, Seth; and so of his son, Enos; so of Cainan, Mahalaleel, Jared, Methusaleh; so it is recorded of all, when the age of a man was as the age of a tree—older or younger—the call came, "and he died." And now—

James A. Garfield, whose deadly wound was not healed, our beloved President, looked up to and loved as was no ruler before

him, watched and wept over by a waiting world, stricken down as a martyr, he suffered as a hero; "and he died"—as a saint, in the fullness of fame, enshrined in the heart of civilization, and is embalmed in the memory of mankind.

In the "psalm for Solomon," in which we find "a greater than Solomon," how applicable is the language to the condition of our martyred hero in all the four score days of his dying! "Prayer also shall be made for him continually; and daily shall he be praised." And now, when our hearts are bursting with the pressure of unuttered sighs, when our eyes are scalded to dryness by unwept tears; when we are groping in the dark, dreary desert of unanswered prayer, as our narrow souls survey the facts, when faith is faltering, and hope is hounded by the demon of despair, may we not well recall the quotation from the sacred word with which our hero quieted the New York mob, which had already begun to riot and murder, as a relief to their pent-up anger at the assassination of the memorable emancipator, "'Clouds and darkness are round about him; righteousness and judgment are the habitation of his throne. The Lord reigneth;' and the government at Washington still lives!"

Importunate prayer for the life of the stricken President went up, day and night, from temple and cathedral, from church and synagogue, from hamlets and hearthstones, from the field, the work-shop, and the wayside, in public and in private; but he died.

A man lived on the banks of the blue Galilee, who could look up to his Heavenly Father and say, "I knew that thou hearest me always;" yet even he was constrained to pray, "O, my Father! if it be possible let this cup pass from me; nevertheless, not as I will, but as thou wilt." "Our God is in the heavens; He hath done whatsoever He pleased." Our short-sightedness would not have it so; but He sees the end from the beginning. "Shall not the Judge of all the earth do right?" "Thy will be done!"

DIED EARLY.

DR. JOSEPH BURGER, a graduate of the Dental College, Michigan University, class 1881, died in Toledo soon after the close of the session. The fell destroyer, consumption, prostrated him

during the lecture term. A classmate tells us "he was a man of unusual abilities, and won the universal esteem of the faculty and the class."

No one is saddened to see fruit gathered when ripe; but to our short-sightedness death seems to make some fearful mistakes in his harvesting. But with Him who sees the end from the beginning, the case is different.

Correspondence.

"I charge you that this epistle be read."—PAUL.

Editor of the Ohio State Journal of Dental Science.

IT doubtless occurred to you, as well as the readers of the JOURNAL, that in a former communication we left the hypothetical patient made for Dr. Metcalf in rather an unsatisfactory situation. True, he had his teeth filled, but you were not informed anything about when, where, or by whom, he had his artificial denture manufactured, or whether he ever got any. It will be the purpose of this to carry the case along a little further, and note some of his experiences under the new *regime*, the beautiful divorce system so earnestly pleaded for by Dr. M. Our patient we shall hereafter call Mr. Hypothetical, or for brevity, Mr. H. On leaving Dr. M.'s office, it must be confessed Mr. H. was somewhat puzzled and not a little disappointed. He had failed to get his teeth put in. He didn't know what was the matter with the dentists. Had always been led to suppose that a dentist was one who put in teeth, as well as filled them. In fact, had believed till now, that manufacturing artificial teeth was their main business. He was getting his eyes opened as to the advanced state of dental science. But he was determined as to one thing: he was going to have his teeth put in. He goes to his friend who is wearing a beautiful set of teeth, which, his friend tells him, gives him little or no trouble, and are almost as good and serviceable as natural ones. But who made them? His friend tells him he was down to Detroit, and had them made there by a Dr. Geofield, who is a fine filler of teeth, as well as a splendid plate workman, and is a funny fellow,—loves to fish,

enjoys a joke, tells a good story, and adores a dog. But you go down and see Dr. Geofield, and I warrant you he will make you an elegant set of teeth. Mr. H. replies, "I can't spend the time; and it won't pay to go so far for so small a job. My dentist tells me it will not cost over four dollars to have my teeth put in." His friend tells him he paid one hundred dollars for his.

Mr. H. is getting mixed up. Dentistry must be very high priced in Detroit, or else it's awfully cheap in Kalamazoo. Can't you tell me of some one here whom you can recommend? His friend tells him he looked around before going to Detroit, but could find no one who worked gold or continuous gum; and one or the other of these was what he wanted. He tells him, however, that there is a Dr. N. O. Fitz around on the other street, who they say does about as good work as any one here, and seems to have a large business; but they say he uses only rubber and that other pinkish-looking stuff; I believe they call it *Sell-O-Lord*. Mr. Hypothetical here pulled out of his vest pocket that same seven by eleven card handed him by Dr. M. He had read only the head lines before. He reads it all through now. It is an advertisement of the *Michigan Steam Dental Co.*, setting forth in glowing terms the merits of this immense establishment, and signed, N. O. Fitz, Manager.

He passes on, and meets another friend, and receives their salutation: "Hello! Mr. H., you have been going to the dentist for the last two weeks, and I see you haven't got those teeth put in yet." Mr. H. turns the subject, and mentally resolves he will have his teeth put in here and now. He passes around that square, and up the other street. He has no difficulty in finding the place; the signs are large — one extends the entire width of the building; two large circular signs, in black and gold, one on either side of the entrance. The place looks respectable; lace curtains show nicely behind the large plate glass in the windows. He rings the bell, and is shown in by an attendant. There are quite a number of patients waiting; more than he had ever seen in Dr. M.'s office. Some of them look a little queer to him. He doesn't know any of them. Some well-dressed ladies, but he doesn't remember ever to have seen any of them before; they don't belong to his set. He asks for, and soon meets, the manager, Dr. N. O. Fitz; makes his wants known, and wants his teeth just as soon as he can get them. The Doctor is very busy; has fifty

sets of teeth on hand now, and all of these patients waiting. The manager tells him his rule is, "First come, first served," but he will make an exception in his case. He is invited into the next room to have his impression taken. In passing the open door of a room just beyond, he gets a glimpse of four or five boys running sewing machines, and wonders if they make shirts here. Mr. H. had never been much about dental offices, especially steam dental establishments, and didn't know these were lathes, and these boys were polishing up rubber plates. A boy appears with an impression cup and some softened wax. The impression is taken in half a minute. Mr. H. asks Dr. F. when he will have his teeth done. The Doctor pulls out his watch; it is half-past two. "Call around at 5 o'clock, and your teeth will be done. We do everything by steam here."

Mr. H. called around, and found the teeth were done. They were put in. Mr. H.'s teeth were of a yellowish color; these were purely white. His were worn at the cutting edges, squared off, and pretty thick; these were the model of the *perfect* artificial tooth, brought down to a thin and slightly rounded edge. "Beautiful!" exclaims the Doctor; "just the thing! They make all the difference conceivable in your expression!"

They did. But Mr. H. did not hear what the doctor had been saying. He was thinking about his teeth. He was feeling carefully over the plate with his tongue. He thought he had a young smoothing-iron in his mouth. Wants to know what the doctor said. Asks: "*What'd you tha, Doctor? I wath a 'inkin' of thumpthin' eth.*" The doctor explains. "*But, Doctor, tha don't theem to thit. When I thove 'em up on one thide tha thove down on thother!*" The doctor tells him to suck them up. He tries. "*They won't thuck. I tell you, Doctor, tha muth be thumpthin' wrong with theeth theeth. Don't you obtherve how ectheedingly tick my peach ith?*" The doctor had observed his "peach," and explains that it is always so when teeth are first put in, and that in a few days he will speak with the greatest ease. Now, as to the rocking of the plate. Dr. N. O. Fitz had not observed that there was a hard ridge through the center of the palate, and that on either side the tissue was quite soft and yielding. In fact he had made no examination of the mouth at all, and had not thought or known any thing of the case after having sent the impression to the laboratory, until the teeth were returned to

him finished. But all the objections that poor Mr. H. could offer were readily met by the fluent speech of the manager. So he concluded to pay his bill and leave. "How muth thal I pay you, doctor?" "Eight dollars, sir." His hand moves deliberately towards his left hand vest pocket. He pulls out that now crumpled handbill. "You tha here you put in a thull thet of theeth for then dollars, and you charge me eight dollars for four!" The doctor says that's only an advertising dodge; that he gets twenty and twenty-five dollars for a set oftener than any other price; and in his case he used the very best and highest priced material. Mr. Hypothetical is a little impatient and not disposed to cavil about four dollars, so pays his bill and goes out to the street. Heretofore all his friends knew he had some teeth out; now everybody knew he had false ones in. They were so very false. When he meets his friends and greets them, he notices they all seem to look at his mouth. He thought he saw a smile play across the face of one or two when looking at him. He doesn't want to be embarrassed by attempting to talk. Concludes he will go home to his wife. She is a woman of excellent taste, and will be pleased, as she has often coaxed him to have his teeth put in. As he goes up the walk to his home, Towser, as is his custom, comes to meet and greet him. He speaks, "Good dog, *Towther!*" Towser backs out two or three feet, and barks. He speaks again. The dog keeps on barking and barking. He wonders what's the matter with that dog. As he ascends the door steps, Towser makes a detour of about fifteen feet, and brings up with his nose close to the bottom of one leg of Mr. H.'s pants. There is a question in that dog's mind. He is settling it. He is assuring himself. He does it; and goes off quietly, and lies down in the grass, and remembers that he is growing old. A dog's eyes may prove false, his hearing deceive him, his nose never does—it was his master. But Mr. H. goes in, his wife meets him to receive the always expected kiss. He speaks to her. She starts back a little, bursts out into a laugh, sees the serious look he puts on, and tries to excuse herself for laughing. She thinks the teeth will do,—only they are a little white, and his speech will improve as he wears them. Jimmy, who is an observing lad, and allows nothing to pass him unnoticed, calls to Bob to come and see papa's new teeth. Saw them as soon as he opened the door; they are too pretty for anything, white as

snow. Both boys joined in begging papa to have all his teeth pulled out and pretty new store teeth put in.

Mr. H. thinks he will take the baby. Now baby has arrived at that interesting age when it notices everything strange or new. He commences to talk to it. It looks at him steadily and seriously for a moment. Its little lower lip begins to curl and quiver, and suddenly it bursts out into a cry, as if its little heart would break. This was too much! A thought flashed through his mind. It was why Towser had barked at him.

There had been tramps around. One of them had broken into a neighbor's house, and stolen some silver spoons. Mr. H. had bought a pistol, marked "Cal. $\frac{44}{100}$," a regular Bull Dog. He wondered where it was, and he wondered if Dr. N. O. Fitz had left his office yet. He had studied physiology and anatomy a little at school, and he felt an ardent desire to take up the study of this latter branch of science again, and proposed to himself to do so by lifting the parietal bones of Dr. N. O. Fitz's skull, and examining his brain. He had heard of dentists being shot; thought his grievance equal to anything he had ever heard of; didn't believe any jury in the country would convict him. But baby had stopped crying. It was only a little fright as if a stranger had taken it. The boys had quit talking about store teeth, and Mrs. H. had gone quietly about her work. Mr. H.'s rage for anatomy had somewhat subsided. He would try to get used to his teeth. He would wear them. When he went on the street, he was subjected to no little annoyance by the remarks of his friends, as he continued to wear his teeth; his "*peach*" improved somewhat—still was quite "*tick*," and he usually took his teeth out before meals, and many times did not replace them after; a part of the time they were carried in his vest pocket.

He was subjected to considerable annoyance in many ways. A wag wrote him an anonymous letter, wanting to buy his head to present to the rifle club for a target. He thought that big white tooth would make a splendid "bull's-eye" for short range practice. A wicked girl who belonged to an archery club had been heard to say, "If she had that man's front tooth for a mark, she thought she could make "gold" every time. Another had wanted him to get up a class in elocution.

Time wore on. Towser and baby had each come to know him equally well, with or without teeth. His family and friends

had become reconciled to the situation and accepted it. We are all said to be creatures of habit. Habit had led Mr. H. to tolerate his juvenile smoothing-iron a portion of the time. When he did not wear it, a little reddish-brown something might frequently be seen protruding from his vest pocket. This he would shove carefully down into the southwest corner. His hatred for, and malice towards, Dr. N. O. Fitz had worn away with time. He is a bad man who can neither forget nor forgive. He had been too hasty. He had heard of persons who had gotten artificial teeth going back to their dentist's ten or twenty times before they got them to do well. He comes to a decision: He will go around and see the superintendent again. This decision he keeps within his own breast. He doesn't tell even his wife. He goes. He sees the doctor and makes known his trouble. Thus far we have detailed the trials and tribulations of Mr. H., resulting from the dental divorce. The result of this visit, and a second effort of Dr. N. O. Fitz, must be left to another paper. F. M.

PROTEST.—It strikes us that it is pretty tough to ask us to print the following, but as we have been written to several times in reference to it, each time with somewhat of a demand that it be published, with strong hints that we do not belong to ourselves, we have become desperate, and here it goes. We can correct the proof by moonlight.—ED. JOURNAL.

Editor of the Ohio State Journal of Dental Science:

DEAR SIR:—An annual meeting of the American Dental Society of Europe was held at Wiesbaden, in Germany, immediately after the close of the International Medical Congress in London. At this meeting were present the following named visiting dentists, who were then either traveling upon the continent, or had purposely made the journey to Wiesbaden that they might attend it: J. H. McKellops, St. Louis; L. D. Shepard, Boston; A. M. Dudley, Salem; James McManus, Hartford; J. Taft, Cincinnati; Geo. J. Friedrichs, New Orleans; T. T. Moore, Columbia, S. C.; J. A. Watling, Ann Arbor; George L. Field, Detroit, and W. C. Barrett, Buffalo. In their honor was given a dinner in the "Grotto," at the Grand Hotel du Rhein, concerning the success of which it might be necessary only to say that all the arrangements were made by the chairman of the executive committee, Dr. A. A. Blount, of Geneva, Switzerland, formerly of Springfield, Ohio, and who gave to the proprietors of

the hotel *carte blanche* to provide the best dinner and the rarest wines which could be procured. I am not about to give you all the items of the remarkable *menu* to substantiate my assertion; for I shall readily be believed when I affirm that the hospitality of the American dentists resident abroad is royal.

It may well be imagined that this meeting of Americans long beyond the reach of dental associations, with those fresh from America, was a joyous one, and that it brought to the surface tender recollections of friends, and home and country, which had been long repressed. On the other hand, the visiting brethren, in the midst of their journeyings in lands strange to them, felt as does the traveler in an arid desert when he stumbles upon some green oasis. They had long entertained a desire to greet those men who have so nobly sustained the reputation of American dentistry abroad, and made the name of the American dentist synonymous with professional superiority.

After the removal of the cloth, toasts and speeches were the order. I do not propose to attempt a full report of them; but I will endeavor to perform an agreeable duty with which I was especially charged, and convey to you some pleasant expressions of kindly personal feeling there made, and demand their publication in the OHIO STATE JOURNAL. After patriotic and professional sentiments had been duly honored, Dr. J. H. McKellops rose and said that he desired, at this delightful moment, to call to recollection one man, at mention of whose name every heart then present would warm, and every eye brighten; a man who had done more for dentistry than it is often within the power of one man to accomplish; a man who was even then battling with disease and infirmity, that he might be of yet further service to his beloved profession. He would give the name of George Watt, God bless him!

The Chairman, Dr. W. St. George Elliott, of London, called upon Prof. Taft to make response to the honored name. It is not in my power, from mere recollection, to give anything like a report of the speech of Prof. Taft. Inspired by the theme, he outdid himself, and made one of the best speeches that even he ever gave voice to. He reverted to the many years of usefulness of Dr. Watt, to his persistent energy, his untiring perseverance, his self-devotion, his generous labors, and the splendid results which had crowned his efforts. He detailed some of the embar-

rassments and difficulties under which he had labored, and over which he had triumphed. He feelingly alluded to his own long continued and ever pleasant association with him, and, finally, charged those there present never, for a moment, to forget the great weight of obligation to Dr. Watt, under which not only they, but every member of the dental profession rested.

I wish, Mr. Editor, you could have been present to hear some of the kindly expressions of regard for you personally, and of respect for your labors, which came spontaneously from the lips of every one present. It would have inspired you with renewed courage, and a fresh determination to go on with your work. If it is sweet to be remembered by those so far removed from your presence, it is doubly so to know that the recollection brings only pleasant thoughts, and inspires but affectionate words.

Upon motion the writer was, by unanimous vote, directed to convey to you the greetings of the Society and its guests, and to write a report of the matter for the columns of the *JOURNAL*. You will therefore be kind enough to veil your own personal inclinations, and so far to comply with the request of the meeting as to give this space for publication.

Dr. George L. Field proposed the memory of Samuel S. White, the friend of Dentistry and Dentists. The toast was drank standing and in silence, while the tear of emotion stood in the eyes of men all unused to weep.

Dr. W. C. Barrett, after adverting to a very pleasant visit which he had recently made to the Father of American Dentistry in Europe, at the baths of Schlangenbad, whither the latter had gone in hopes of recruiting a system sadly broken by hard labor and disease, proposed the name of Dr. Abbott, of Berlin, the nestor of the American Dental profession, so far as Europe is concerned. He spoke a few words of eulogy, which were warmly seconded by a number of those present, and the name was received with an enthusiasm that would have made the kindly eyes of the genial old man boom with pleasure could he have been present to hear them.

After several hours spent at the table and in this kindly interchange of sentiment and good wishes, the meeting broke up, and the next day the members separated, some to return to their fields of labor in foreign lands, some to continue their wanderings until the time for their departure for home should arrive, but not

one to forget, so long as reason holds her throne, those hours so delightfully spent in fellowship with men whom they are proud to claim as not only professional, but social brothers.

Most truly yours, W. C. BARRETT.

No. 11 West Chippewa street, Buffalo. N. Y., September, 1881.

Editor of the Ohio State Journal of Dental Science.

The most difficult part of any business is to obtain assistance ; and this is especially the case with dentists. There are many who can do good work themselves, but are utterly incompetent to direct others. They 'do not know how to direct. They can not make allowance for the want of ability in the assistant. They expect too much, and are disappointed, and show it, when the work does not come up to their expectations. Now, if this is the case with those who know how, and can do good work, how much more is it likely to be the case with those who cannot do it themselves, nor give proper directions how it should be done? for they do not know the difficulties attending the process, nor what special abilities are requisite. They expect too much, or, what is more likely, require what cannot be done, and so are dissatisfied. We may, therefore, lay it down as a rule, that those who know how to work, and know the difficulties attending the doing of it, will be more competent to give directions about it ; and yet there are many of these who cannot give clear and intelligent directions to others.

The faculty of imparting their ideas to others, so that they can understand them, is a power not possessed by many ; and the assistant must understand the directions, and must also have the ability to execute the work. It is only after repeated trials that the employer and the assistant learn to understand each other, and get along satisfactorily together. Or, what more frequently occurs, the failures to give satisfaction have been so often repeated that the employer has become reconciled to them, and orders the present piece of work to be done like the former, until the work becomes a kind of stereotyped edition, only varied enough to make it suit the case, so that the style of the workman is as plainly stamped on his work as his handwriting is on paper.

The ability to do the work, or to give clear and explicit directions how it should be done, is not all that is required to get

the best results from others. There must be mutual respect and good feeling between the parties. Sometimes injury is done by being too minute in the directions. There is not enough trust placed in the judgment and skill of the assistant. There is nothing that will stimulate a man more than to show that you have confidence in his ability; while to be too minute not only shows want of confidence, but destroys that self-reliance that is necessary to the best results. The opposite extreme should be avoided—that is, depending too much on the workman. If this is done, he will soon set up his judgment in opposition to his employer's, and then do the work in his own way. A careful supervision of the work is very different from constant and irritating meddling. The one will command respect; the other will only irritate and cause bad feeling.

The employer has the right to demand of his workman the best of his abilities; and in cases where articles are manufactured in quantities, and each piece should be made like the others, the employer may be severe if the work does not come up to the standard. But in such cases as the dentists have, where no two pieces are alike, a good deal must be left to the assistant's judgment; and a good feeling must be maintained between the parties, or he may cause annoyance in a thousand ways that cannot be prevented.

On one hand, the services should be faithfully and cheerfully given; and on the other, a grateful appreciation should be accorded. These feelings will bind the parties together. But if one party tries to get all that he can, and the other to do as little as possible, there will always be unpleasant feeling, and they will suffer accordingly.

T. L. B.

PHILADELPHIA, November 1, 1881.

Editor of the Ohio State Journal of Dental Science.

In a late issue of the *Dental Cosmos* appeared the following advertisement: "A formula for the preparatory treatment of the cervical walls of cavities up, near, and under, the gums, for the prevention of the disintegration and decay of the tooth at this point after filling. This treatment preparatory to filling has, *in every instance* (italics ours), saved teeth at this most diffi-

cult point, when all other means have failed. Indorsed by leading members in the profession. Sent post free on receipt of one dollar.
I. E. REGISTER, D. D. S."

Mr. Editor, we are no spring chicken in the profession; had flattered ourselves, indeed, that the age when testing others' crude experiments, first paying roundly for the privilege, and being held responsible for the failures certain to result, with ~~us~~ ^{us} was past; but there appeared something so alluring in the idea of invariable success in conjunction with cervical walls, that our usual caution deserted us, the money was forwarded, and we became the possessor of the formula.

Having thus, by right of purchase, acquired this unfailing method, we began to be impressed with the idea that such a secret was too much for one man, or even, indeed, for the comparatively few men who might have a spare dollar to invest in its purchase. This led us to the consideration of the comparatively increased benefits which might be conferred, could each one of the twelve thousand practicing dentists scattered throughout our great country, become partakers of this beneficent boon, this never failing method; and after much reflection we decided, as a preliminary step, that to the readers of *THE JOURNAL* (which, if it does not already, should, and doubtless will, include most of them soon,) should the great secret be imparted.

With this brief explanation we proceed to the method itself, which will be given in the precise language of the writer, as in justice due, with quotation marks when describing the process: "It is an accepted theory that all amalgam fillings undergo expansion to a greater or less extent," (this is, of course, contradictory to the statements of Professors Hitchcock, Bogue, and almost every maker of amalgam in the country;) but as the success of the method rests entirely upon the correctness of this assumption, those who use it are expected to receive the "accepted theory," "nothing doubting." This should not be difficult, since the process costs them nothing. But to proceed: "It is to this expansion that the efficacy of my practice, to a great measure, depends. Prepare a solution of pure gutta-percha dissolved with chloroform, to the consistency of cream. After drying the cavity by the aid of hot air, invest the whole cavity with the solution. Should the layer of dentine over the pulp be so thin as to be irri-

tated by thermal changes, (the pulp is meant, probably,) place over it a small piece of gutta-percha previously softened by heat, which will adhere perfectly. A pellet of phosphate of zinc, worked to the consistency of putty, will answer equally well. Do not allow the solution to extend beyond the margins of the cavity, and if it does, carefully remove it, leaving the solution barely flush with the margin. Amalgam inserted into cavities prepared as described, will save the teeth as long, if not longer, than the best gold fillings." Now comes the theory of the process, which, in the printed directions, is placed in capitals; but as the theory is the one thing which is utterly false and worthless, we shall not insist upon its being thus displayed in the THE JOURNAL.

"The expansion of the amalgam drives the thin layer of gutta-percha formed from the solution, into the tubuli of the dentine, and conforms it hermetically to all indentations of the enamel edges."

With this enunciation of the principle, conclude the directions, but underscored by a red line is the following request, which, with much regret, we feel obliged to refuse:

"I make the request that each dentist receiving this *treatise* (italics ours), will keep all information it contains personally to themselves, in justice to your obedient servant,

I. E. REGISTER, D. D. S."

Now, here is a man with the title D. D. S. attached to his name, advertising a method of filling teeth as a secret, a thing which is certainly altogether uprofessional, and claiming as an universally accepted theory, what he, and his teachers as well, should know is utterly false, and asserting that fillings made by this method are equal or superior to gold. If they were to say such gold fillings as they make, it might be nearer the truth. It would be interesting to know at what dental college these things are taught, if at any; the probabilities being that these theories were evolved from the inner consciousness of the great Register himself. The only college which would be at all likely to promulgate them, is the twelve dollar affair at Delevan, Wisconsin, Dr. George Morrison, President. Cheap diplomas, cheap fillings, and cheaper dentists, being the rule generally. But this paper has already reached a length beyond what we intended or your

readers' patience will warrant probably, and we close with the remark that at some future time a method which will, we believe, be found a really successful one, may be offered for consideration and trial.

W.

VITALIZED AIR.

Editor of the Ohio State Journal of Dental Science.

IN the August number of the JOURNAL we noticed an article by one Mr. C., condemning "Vitalized Air" as an anæsthetic. Now, we, having used this *awful stuff*, would like to answer a few of the gentleman's statements. In the first place, he speaks of this as a new anæsthetic. We do not claim this to be anything of the kind,—it is not claimed to be anything more or less than nitrous oxide gas, to which the name "vitalized air" is given in preference to laughing gas.

We admit that with the old method of administering the nitrous oxide the name laughing gas is preferable to that of vitalized air; but with Dr. G. H. Hurd's apparatus, it would be very improper, for with this apparatus there are none of those boisterous effects which gave rise to the name laughing gas, but on the other hand the patient remains calm and quiet throughout the whole operation. The gentleman says: "The profession as a class are slow to adopt patents until their value is assured." True, but when its value *is* assured, when all dentists and physicians who have witnessed and thoroughly investigated it, declare it the best thing for the purpose ever invented, why, in the name of all that is good, condemn it, and say that it is a humbug gotten up by quacks to deceive the public. Oh, shame, that one in our most noble and beneficial profession should not have the advancement of it more at heart than to do this.

How about the little reservoir containing chloroform?

It is attached so that the chloroform unites with the nitrous oxide gas as it passes from the cylinder into the receiver. "But," says Mr. C., "that is very dangerous." Of course it is, when not properly mixed, the same as in the manufacture of nitrous oxide gas, when heated to too great a temperature forms a very deadly compound.

Now this mixture of chloroform and nitrous oxide gas contains *one drop of chloroform to each two gallons of gas*. Is this

dangerous! We think not. Out of over five hundred patients, to whom we have administered the anæsthetic, with and without the chloroform attachment, we do not know of a single instance in which bad results have followed. We know of but one instance in which bad results *are claimed* to have followed (the same case to which the gentleman referred when speaking of the public journals enquiring "What is Vitalized Air?" etc.), but on investigating the matter it was found that the sickness did not arise from this source. The chloroform attachment is not essential, however, to the successful working of the apparatus, as it had been giving unbounded satisfaction previous to the use of it. Its principal merit lies in its lessening the amount of material required to produce insensibility. Admitting that of the thousands who have taken the "vitalized air" one person was sick for a few days afterward, does it necessarily follow that we must condemn "vitalized air," and say it is a fraud, and the dentist who uses it is a quack, and a disgrace to the profession!

Now, Mr. Editor, we hope our brother dentists of the State and elsewhere, after reading these few statements, as well as those of Mr. C., will not form too hasty an opinion in regard to "vitalized air," but will stop and consider the matter, watch, if possible, the operations of this machine, after which we think they will agree with us that the "vitalized air" machine is truly a benefit to the profession as well as the public. E. E. H.

REMARKS BY THE EDITOR.

We are glad to insert the above article for the reason that one who appears to have a right to speak, tells us that it is not claimed that "Vitalized Air" is other than nitrous oxide. But why, then, change the name? Nitrous oxide is the proper chemical name of the gas, and is also its commercial name. When John Smith calls himself James Thompson, his neighbors have a right to inquire why. The change justly excites suspicion. We do not suppose that all who use vitalized air are governed, in whole or in part, by bad motives; but the originators of the change of name are under obligation to explain satisfactorily, or they must not think strange that their motives are suspected. Nothing but nitrous oxide! But it seems, after all, there is a little chloroform. But even that little is not essential. Is it "vitalized air," with or without the chloroform? So small a

quantity cannot be dangerous? A silly young girl proved too confiding, and was deserted. When the unfortunate result, somewhat in the shape of a crying doll, came to time, she claimed that she should not be regarded with aversion, when it was such a very small baby. But somehow she didn't seem to stand as fair in society as before the mishap. Not much chloroform, to be sure, but enough to condemn the mixture. Pure chloroform, unmixed with anything, is probably safer than it can be made by any combination. Nor is the fact that a few hundred cases have proved fortunate, when the mixture has been used, evidence of safety; for most physicians know that with chloroform alone no accident is likely to occur in that number of cases; yet we all know that chloroform is dangerous.

It is possible that a combination of nitrous oxide and chloroform is the best and the safest anæsthetic; but if so, professional courtesy, honor and honesty, require that the fact be not hidden, or even obscured, under a misleading title. As to any personal feeling among practitioners, in reference to "vitalized air," we do not propose to interfere. Anæsthetics, sometimes, mean life or death; hence there should be no deception.

The "deadly compound" formed when too high a temperature is used in preparing nitrous oxide is nitric oxide; but this is not more like chloroform than a rope is like a pistol,—a man may be killed with either.

Just now there seems to be a reaching for names to be used as advertising devices. I see a paper where a dentist has inserted a picture of himself (or the devil, perhaps,) administering "liquid nitrous oxide," which he calls "dephlogisticated nitrous air." There's nothing in a name. Pompey Jones, on his sign-board, called his candy shop a "Kinfictionatory Mandifactory," and no one objected; for the little shop never had any other name; but when he changed his sign to "Victualized Sugars," the boys and girls asked him why.

Editor of the Ohio State Journal of Dental Science.

If a Volunteer Essay is prepared for the Ohio State Society, must it be on one of the subjects reported in the programme? B.

ANSWER, BY THE EDITOR.

No, it may be on any dental or medical subject, but it should be offered through the "Committee on Volunteer Essays."

Books and Pamphlets.

"I leave you here a little book."—JOHN RODGERS.

OUR EXCHANGES.

PARTLY from the fact that ours is a new enterprise, partly from the confusion incident to a prolonged and unexpected attack of acute disease, and partly from the fact that some of our exchanges are sent only to the editor, and others only to the publishers, we have not been able to make up a tabulated list of our exchanges satisfactory to ourselves. We expect to begin the new year with a compilation of a systematic table, giving name of papers, publishers, place of publishing, etc.; and a statistical page thus devoted will be quite profitable, as an advertisement to those who cordially exchange with us. We would be glad if all our exchanges would send one copy to the editor, at Xenia, and one to the publishers, at Toledo. Those who already do so have our thanks.

[THE OHIO MEDICAL JOURNAL.

This is among the neatest of our medical exchanges, and is a credit to its publishers. It is the journal of the Ohio State Medical Society. Its editors are, J. F. Baldwin, M. D., Columbus; J. H. Lowman, M. D., Cleveland; T. C. Minor, M. D., Cincinnati; George A. Collamore, M. D., Toledo, and W. J. Conklin, M. D., Dayton. Number 3 of Volume I. is before us, which shows ability and taste on the part of contributors and editors. We may have occasion to draw on its pages.

CATALOGUE OF MEDICAL, DENTAL, PHARMACEUTICAL AND SCIENTIFIC PUBLICATIONS, published by Presley Blakiston, 1012 Walnut street, Philadelphia.

Neatly gotten up, with classified list and subject index—indeed, it is every way arranged for convenient reference. These

publications may be had from booksellers generally, and especially from Ransom & Randolph, Toledo, O.

A DIRECTORY OF THE PRACTICING DENTISTS OF THE STATE OF TENNESSEE, January, 1881. Compiled for the American Dental Association, by Henry W. Morgan, M.D., D.D.S., Nashville, Tennessee.

A neat little pamphlet of fifteen pages, well printed, with names accurately in alphabetical order. The care evidently bestowed on it, gives the suggestion of its probable accuracy.

A DIRECTORY OF THE DENTISTS PRACTICING IN THE STATE OF GEORGIA, compiled for the American Dental Association, By Dr. George W. H. Whitaker, Sandersville, Georgia.

A neat pamphlet, and, to all appearance, carefully compiled. The dentists' names are in alphabetical order, with postoffice and county of each in corresponding columns. Also, the law regulating the practice of dentistry in Georgia, the officers and members of the State Society, etc., etc. This pamphlet recalls an old-time friend. Our first ideas as to carving block work were gained from Dr. Whitaker, but from this no one must infer that the doctor is an old fellow like ourselves. Though then new to dentistry, we were old in medicine, and in "Whit," as his comrades would call him, we found an artistic carver, and we are not surprised that this pamphlet shows neatness and good taste. "Whit" couldn't have botched had he tried.

COLUMBIA UNIVERSITY LIBRARY

This book is due on the date indicated below, or at the expiration of a definite period after the date of borrowing, as provided by the rules of the Library or by special arrangement with the Librarian in charge.

[illegible]



